

# Medical Times

A Monthly Journal of Medicine, Surgery, and the Collateral Sciences

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## General Scientific

### THE PATHOLOGY OF SYPHILIS.

FAXTON E. GARDNER, M. D.,

ASSISTANT VISITING GENITO-URINARY SURGEON, NEW YORK  
POLYCLINIC.

New York.

No chapter more than pathology shows the tremendous progress made in the study of syphilis in recent years. Less than twenty years ago our knowledge of the pathology of the condition was limited to a good deal of speculation and the histology of the definitely syphilitic lesions. Naturally such knowledge in the absence of any actual notions as to the causal agent of the disease was bound to remain comparatively unfruitful. Many conditions, now directly known to be syphilitic, were then linked with syphilis only because of masterly clinical deductions of men such as Fournier. Direct proof was so altogether lacking that many other equally prominent men felt perfectly justified in denying the relationship and that Fournier himself was led to consider these conditions as parasyphilitic, that is, syphilitic in origin but not in nature. By contrasting the arguments then brought forward, and those pathology puts at our disposal now, we get a clear idea of the width of the gap that has been bridged over. One of the best arguments in favor of the syphilitic origin of tabes and paresis (as late as 1903) was that syphilis was found in the anamnesis of tabetic and parietic patients in exactly the same proportion as in the anamnesis of patients suffering from gummata of the tongue, an undoubtedly syphilitic condition. This is at best a very indirect proof. Now the spirochete has been demonstrated in and recovered from the central nervous system of tabetics and parietics, and pathology supplies us with a direct proof.

This advance in pathology has far more than an academic interest. As long as the pathology of a condition is uncertain, the treatment can but be empirical. Pathology alone furnishes the rational basis for scientific and satisfactory treatment. We now have, even if the problems that still confront us remain many and complex, a sufficient conception of the general pathology of syphilis, thanks to the experimental researches of Neisser, Noguchi, Nichols and others, and this general conception is the rationale of our present day treatment.

Syphilis is generally termed a "constitutional" infec-

tion. It would be more accurate to say that it is a disease resulting from *disseminated metastases* and *multiple separate foci*. It is not "constitutional" in the sense of the word as applied to gout and diabetes, for instance. The changes that exist in the blood during syphilis are due to the presence of the metastases, and very likely disappear when the morbid foci become really extinct. Colonization, with subsequent more or less complete regression, and outbursts originating from time to time in spirochetal remnants is about as accurate a description of the pathological mechanism of syphilis as may be given in a few words.

The spirochete gains entrance into the body through a break in the epidermis. It may then be deposited directly into the blood stream, as in the case of surgeons cutting themselves during an operation, or as a result of blood transfusion, when proper safeguards as to the donor have not been taken. But this direct blood inoculation is uncommon compared with the number of cases when spirochetes are deposited in the lymph spaces of the corium of the skin or mucosa. From the interepithelial lymph spaces they reach the perivascular lymph spaces where they multiply. The result of this invasion and of the reaction of the surrounding tissues is the lesion commonly known as *chancre*.

The chancre is essentially a proliferation of the fixed connective tissue cells, with neoformation of capillaries around which there is abundant infiltration of plasma cells and lymphocytes. Thus syphilis from its first lesion shows unmistakably one of its chief characteristics: its affinity for the walls of blood vessels.

Naturally the infiltration in time spreads around the site of the inoculation. The microscopical connective tissue changes begin *long before* the macroscopical development of the chancre; in fact, they start as soon as inoculation takes place, and they keep progressing during the whole length of the first incubation period. If the chancre be excised and examined under the microscope at an early stage, it is found sharply limited, later the infiltration is diffuse and much more extensive, both in surface and depth. The epidermis is variously affected; in the typical Hunterian chancre, without mixed infection, it is thinned, sometimes on the contrary hypertrophied; if there be an ulceration, it is only very superficial, whilst if mixed infection supervenes, ulceration



occurs, and may become quite deep, affecting not only the epidermis, but also the underlying corium.

Let us remark incidentally that mixed infection, which thus alters the gross pathology of the chancre, is a very frequent occurrence. The more we know about syphilis the less frequent pure chancroid seems to become. Many lesions that formerly would have been unhesitatingly classified as chancroidal are now shown to be syphilitic by the finding of spirochetes and the Wassermann test. The diagnostic rule based on gross pathology, namely, that chancre is a new growth and chancroid an ulcer does not hold good any longer. Macroscopically, the chancre may be just a papule, a herpetic vesicle, a superficial erosion. What is responsible for these variations is not easy to state definitely, but undoubtedly they result from the action of one or several of the factors which, as we shall see later, are constantly modifying the anatomical evolution of syphilis, namely the number of spirochetes, possibly their virulence, their strain, and the defensive reaction of the tissues.

From the point of inoculation, infection spreads forth to all tissues of the body. The propagation takes place first through the lymph stream, and the first organ reached is the lymph node receiving the lymph channels of the site of the chancre, the so-called "satellite." This is reached by the spirochete *very early*, long before its increase in volume gives the first clinical proof of its involvement, since animal experiments have shown the spirochete in the testicle and bone marrow even before the development of the chancre which generally comes two weeks before the "primary" adenitis.

Once the lymph glands have been passed, the whole lymph stream is infected, and of course the blood stream. Generally speaking, the spirochete is a lymph organism, but the first generalization takes place through the blood stream. This also takes place very early, long before the secondary outburst which was formerly considered as heralding it in. Hoffmann found spirochetes in the blood during the development of the chancre. In a case of Wechseltmann, the patient committed suicide when the diagnosis of chancre was made by a dark ground illumination examination, and the spirochete was already present in the cerebrospinal fluid, which is supposed to be the least accessible part of the body for the spirochete.

All this is of the *utmost practical importance* as clearly showing how early clinical manifestations are not the trustworthy outward expression of the early pathological changes. The latter go on *uninterruptedly from the moment the spirochete is deposited on the broken cuticle, and invasion is pathologically complete almost before any clinical sign is present.* But of course the hold of the spirochetes on the tissues is frail and their number much smaller during that early period, so that treatment instituted then has a much better chance of being successful, and even completely abortive. Therefore, it is an imperative duty not to wait for the appearance of secondaries before making a diagnosis. The latter must be made within a few hours after the patient comes with the first sore and treatment begun on the spot. The waiting for the secondaries before instituting treatment has been one of the hardest lived fallacies of medicine. Despite the fact that common sense ought to have been enough to do away with it, it has been supported as late as 1908 by some of the leading dermatologists of the day, and it took the proof of pathology finally to dispose of it.

The blood stream carries the spirochete to all the tissues of the body, it reaches directly, that is, to *every tissue*, and every normal fluid with the possible exception of

the cerebrospinal fluid, for which the choroid plexus probably acts as a protective barrier in a fortunately rather high percentage of cases. But it does not follow that active lesions will result in all organs. The invasion may be likened to the first big rush of an army which sweeps everything in its advance, but has had no time to consolidate its positions. The spirochete has now reached the maximum extent of its domain. From now on it will meet with increased resistance from the defensive processes of the body, and probably, also, from treatment.

The defensive processes of the body begin very shortly within a few days, in fact, after the first inoculation. The skin and mucous membranes at that early period, preceding the first appearance of the chancre, are already undergoing changes which make them less susceptible to reinoculation with the virus already inoculated in one spot. Should reinoculation be attempted, it will result in the development of atypical lesions, the incubation period of which is much shortened. When the chancre appears, reinoculation is no longer successful. The name immunity has been applied to this condition of the tissues, and formerly it was thought that syphilis gave rise to a true immunity. This, however, has been shown to be incorrect; there is no real immunity in the strict sense of the word, but simply an apparent immunity, under ordinary conditions, as long as the body still harbors the syphilitic poison. This refractory condition is called by Neisser anergy. Even this anergy is not absolute, but only relative, because superinfection is possible during the whole course of the disease, even during the late tertiary stage. From a practical standpoint, pathology teaches us that *apparent immunity is solely due to uncured syphilis.* If the patient is really cured, he has no immunity against another fresh inoculation. Reinfections, hardly known with the older methods of treatment, are getting to be more and more common with the modern treatment.

The result of the conflict waged in the body between the invading host and the organic defense depends, of course, on the respective strength of the two elements. If the resistance is sufficient and aided by energetic and early treatment, complete eradication of the spirochete is possible.

More frequently, the resistance is only partially effective and the spirochetel invasion will recede only to a certain extent. It will abandon many positions but consolidate many others. This is the usual occurrence; it was the rule with the older methods of treatment; it still remains the rule with the newer, whenever treatment is too tardy or not intensive enough.

Spirochetes which survive this period become located in special tissues. This location may be purely accidental (at least in theory) but I believe it is almost always governed by several factors, maybe the number of the spirochetes or their virulence, or their special affinities, and, on the side of the body, by a weakened condition of the tissues.

Of the numbers of the spirochetes, we have little to say. As already stated, the number may have some influence on the local reaction of the first inoculation, but once generalization has taken place, we know absolutely nothing certain about the number of spirochetes in the organism. The fact that early lesions contain numerous spirochetes, and later lesions few, allows of certain inferences, but beyond that we cannot go. The development of active lesions, even suddenly, is probably due, as we shall see later, to anaphylaxis, much more than to an increase in the number of spirochetes.

Consideration of the virulence and special affinities



of the spirochete brings up the question of *strains*. By strain we understand a "member of the same species possessing some constant minor characteristics peculiar to itself." There are many clinical reasons to admit the existence of spirochetal strains, especially of a neurotropic strain. Thus, for instance, tabes is unknown in countries where skin and visceral syphilis is very prevalent. The nervous type of syphilis reproduces itself with marked frequency and outer manifestations of syphilis in cases that will later on develop syphilis of the nervous system are often very attenuated. But direct proof is still lacking, and the forms recovered by Wile from the brain of paretics were usually the type found in cutaneous syphilides.

However, some experimental facts are in favor of the strain theory. Noguchi recognizes three forms, thick, thin and medium (the most frequent) which he believes to be constant and to produce a distinct pathological lesion in the testicle of the rabbit. Nichols has isolated and minutely described a special strain which in the rabbit produces with remarkable frequency eye lesions, which may be considered as the equivalent of lesions of the nervous centers in man. But more confirmatory work is still needed in this respect. Practically speaking, the chances are that there are several strains of spirochetes.

Weakened resistance of the tissues has a direct bearing on anaphylaxis in the broad sense of the word, that is, *sensitization*. The part played by the latter in syphilis is really tremendous. Sensitization and defense processes almost run hand in hand. From the first inoculation this close linking is evident. As already stated, during the first incubation the skin is becoming more or less refractory to inoculation, and reinoculation chancres, when produced, are small lesions; but sensitization is already shown by the shorter incubation period of those same chancres (12 days instead of 21). Later, the same thing repeats itself: progressive sensitization of the tissues explains the production of active lesions much better than a sudden increase in the number of spirochetes.

Sensitization is produced experimentally by repeated injections of killed cultures of spirochetes, and is produced, *in vivo*, by the freeing of toxins which accompanies the death of a large number of spirochetes within the body. Thus we see that the defensive process which kills spirochetes at the same time liberates the poison that will sensitize the tissues and make them more vulnerable to the action of the survivors.

The central nervous system has an unfortunate tendency to be more sensitized than any other in the body, perhaps owing to the part it plays in the mechanism of anaphylaxis. Thus may we not have to explain the peculiarities of nervous syphilis more by anaphylaxis than by the existence of a neurotropic strain, as already referred to? The question is not fully answered yet. But sensitization explains very easily the neuro-accidents seen after insufficient salvarsan treatment, and we can draw from what we know exceedingly important therapeutic deductions. If we are to kill spirochetes in the body during the secondary period, we must either strike hard enough not to leave enough spirochetes to take advantage of the sensitization created by the products of spirochete destruction; or we must strike gently and progressively enough not to produce marked sensitization. In other words, we have a choice between an intensive and steady treatment, or a steady, continuous mild treatment. Irregular and insufficient treatment is worse than nothing, because of the chances of getting more sensitization than useful effect. I may add that

intensive treatment, provided intensive enough, seems the more rational. The mild, continuous action is furnished by the "follow up" mercury. In later periods sensitization is less to be feared, but it must always be borne in mind.

Unless early sterilization has been obtained here is the pathological situation at the end of the secondary outburst. Spirochetes are present in lesser numbers, but better adapted to their new surroundings, and much less susceptible to the natural defensive processes or to therapeutic action. They are located in the tissues which probably have suffered most sensitization during the florid period of the secondaries, and comparatively inaccessible. They may lie dormant for a number of years without causing objective or subjective symptoms. But they produce slowly progressive lesions in the organs harboring them, and, maybe, from time to time, reinvade the blood stream. When the lesions are sufficiently marked to give rise to symptoms, the morbid disorder is so far advanced as to be incurable; the relationship with syphilis cannot be established by simple clinical means, and ordinary antisyphilitic treatment is of no avail. Pathology has elucidated this failure of antisyphilitic treatment in a syphilitic lesion, one of the chief reasons that had led Fournier to the doctrine of *parasyphilis*.

To sum up the general pathology of syphilis: The spirochete gains entrance through a break in the epidermis and *immediately* begins to invade the whole body through the lymph and blood streams. Defensive processes begin at the same time and lead to modifications of the tissues which make them less favorable to the development of spirochetes. Generalization is complete *much earlier* than the outbreak of secondaries. Defensive processes and treatment will destroy most, if not all, of the spirochetes. If all have not been destroyed they will locate in various tissues, the location being governed by their special affinities and sensitization of the tissues. These spirochete will insidiously cause destructive lesions which will become clinically evident only years after when they are incurable.

What we see of syphilis from a clinical standpoint is simply the result of a fight between varying numbers of spirochetes, each having its peculiarities, favored by sensitization, against defensive processes. Each of these elements varies, not only in each individual, but in each organ of the individual. Hence the infinite diversity of syphilitic lesions and the protean character of its manifestations; hence also the need of applying to each case an individual treatment.

(To be continued.)

#### Patency of the Ductus Arteriosus.

Griffith records two cases in which this rare affection was diagnosed during life. In the one case, a woman, 32, the signs upon which the diagnosis was made were a loud systolic bruit at the inner end of the second left intercostal space, followed by a very loud diastolic bruit audible a considerable distance outwards along the second space and not transmitted along the left edge of the sternum; also a greatly accentuated second sound; these two phases appeared to be one murmur with no interval between them. There was no cyanosis. After death, which was due to infective endocarditis, the ductus arteriosus was found to be sufficiently large to admit a No. 9 catheter.

The other case, a boy of 5, had a systolic bruit louder in the aortic and pulmonary areas than at the apex; there was some cyanosis and clubbing of the fingers, together with enlargement of the heart. This boy was again seen when aged 13 years, and presented then a continuous humming sound at the inner end of the first right space, with systolic and diastolic increments. As the result of a radioscopic examination a diagnosis of transposition of the aortic arch to the right side was made, together with patency of the ductus arteriosus.—(Quart. Jour. Med., 1915.)

## NEW METHODS USED IN THE STUDY OF FLAT FOOT AT YALE.

WILLIAM LAURENCE ANDERSON, M. D.

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New Haven, Conn.

For years in the physical examinations held by our colleges the need of some reliable method of diagnosing static foot faults has been apparent. The stimulus given this subject by the recent researches of physicians

tained is thrown on the adjustable mirror and this picture in turn is projected to the cheval glass so that the patient is able to see the bottom of his own feet. The examiner now has an exact picture of the actual degree of the foot fault while the feet are maintaining the weight, and the explanation of what is causing the fault and what can be done to correct the condition brings about an interest and co-operation on the part of the student that would be impossible under the old methods.

As a further aid, it is possible to make a photograph from the table mirror, which can be filed and used as a basis for comparison in the after treatment.

**Other Methods of Diagnosis.**—In case a photograph is deemed too expensive, a direct outline of the foot is made. This is accomplished by painting the soles of the feet with a non-fadeable permanent solution of iron, then having the patient stand on a piece of quadrilled paper, thus transferring the impression of the foot to an accurately ruled surface. This will allow measurements and furnish a most refined method of study for the future handling of the case. The objection to painting the feet has been greatly reduced by the use of alcohol, which removes without any difficulty the remaining traces of the stain. The entire operation can be completed in a very short time.

Another method which is being tried with more or less success is the use of stained felt device, resembling an ink pad for stamping purposes. In this case the patient stands on the pad for a few seconds, then on the impression paper. The imprint is made without recourse to the painting, the surplus stain being removed by alcohol as before. The use of the table when supplemented by the painting or pad gives a most complete and accurate means of diagnosing and eliminates all of the guesswork and inaccuracy which formerly characterized this particular branch of the physical examination.

**Forms of Treatment.**—A brief mention of the various methods adopted by the department in the care and treatment of static errors will prove of interest in showing the extent to which these conditions are provided for. The choice of proper shoeing is probably the greatest question. This is a matter to be decided by the individual on account of the expense but wherever possible the shoe is given the preference. If the shoe is of good last the question of a new heel is taken

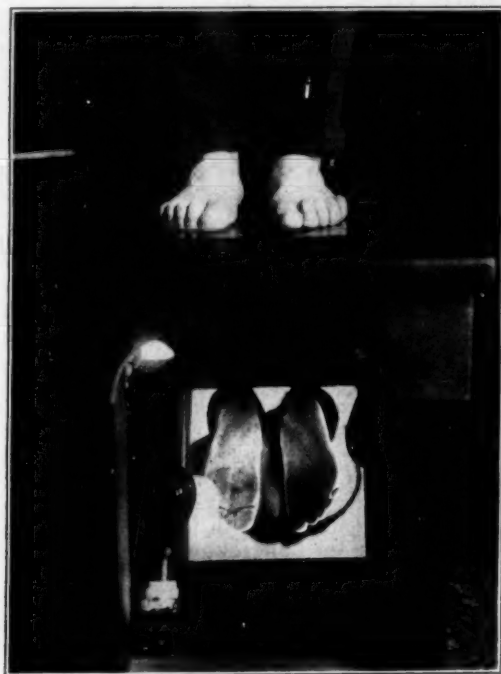


PLATE I.

and surgeons has increased the college medical examiner's responsibility and there has been, accordingly, a growing interest in the methods of diagnosis as well as treatment. At Yale there has lately been added to the equipment of the medical office the most modern form of apparatus for the diagnosis of faulty foot conditions. The apparatus consists of a wooden table thirty-six inches high with a top surface 20x26x2 inches in which is sunk a 13x13x1/4 plate-glass section. Seven inches below and fastened by hinges to the rear legs of the table is a 13x22 inch German silver reflecting mirror, which can be adjusted to varying angles from thirty degrees to forty-five degrees to the plate-glass in the top of the table. Catches on either side of the frame holding the mirror enable it to be fixed at any one of these angles, which adds to the comfort of the examining physician. On the sides and fastened to the diagonally opposite legs are electric lights, with 15 Watt frosted bulbs set in aluminum lined reflectors so arranged that their rays are thrown directly upon the glass top. At a convenient distance from and in front of the table a long mirror, 20x54, also adjustable, is placed.

**Technique.**—The subject stands on the plate-glass top of the table, the electric bulbs throw a sufficiently bright light on the bottom of the bare feet to accentuate the anemic area or points of pressure. The image thus ob-



PLATE II.

up. Plates are advised wherever needed or the patient is referred to some local physician if the condition is one of operative or medical nature. Electric vibration, hot and cold shocking, massage, strapping, padding, and all the mechanical aids are used but if possible the man is given a prescribed course of exercise in the gymnasium to correct the fault. Considering that this is a new branch of the work in the department it can truthfully be said that the results are most encouraging and it is proving a valuable asset in the handling of the athletes, while there is every indication that in the future it will become a most advantageous means of relief in the medical departments of other colleges.

The figures given below are presented merely to show the large percentage of static faults found among the freshmen class. Of the three hundred and ninety men examined one hundred and ten were diagnosed as having foot faults of one kind or another. Seventy of these were re-examined by the new methods with the following results:

Weak Foot.....	One Foot.....Left 9 Right 9.....	18
	Both Feet.....	22
		40
Flat Foot.....	One Foot.....Left 2 Right 1.....	3
	Both Feet.....	23
		26
Relaxed .....		4
		70
	One Foot.....Right 1 Left 5.....	6
With Pronation...Both Feet.....		29
With Symptoms .....		29
Symptomless .....		41

Of the causes given it is somewhat indicative of the obvious ignorance which is attached to this study, for 41 men to have defective feet with which no noticeable symptoms occurred and for which no apparent cause could be assigned. Ill-fitting shoes and improper lasts were the most prevalent causes with excessive violent exercise, poor standing position, general debility from overwork and birth deformities following in the order named:

1. Unknown .....	41
2. Shoes .....	18
3. Excessive use .....	5
4. Poor standing position.....	3
5. General debility .....	2
6. Natal deformity .....	1
Total.....	70

### The Occurrence of Pneumococcus Carriers.

It is known that there exist in the mouths of normal persons as well as of patients suffering from pneumonia definite pneumococci. A. R. Dochez and O. T. Avery have shown that there are four definite types of pneumococcus; that three of these types are met with in patients suffering from pneumonia, and are together responsible for 75 per cent. of these cases, while the fourth type is also met with but is only found in the remaining 25 per cent.; in these cases the disease is found to be usually less severe, and what is important is that this fourth type of pneumococcus is hardly distinguishable from that to be found in the healthy person's mouth. Since the highly virulent forms (Types I., II. and III.) are always associated with disease, and only occur in other conditions under circumstances to be immediately explained, the evidence is strong that in the spread of lobar pneumonia the disease is, in a majority of instances, transmitted from one individual to another. The same writers recently in the *Journal of Experimental Medicine* give evidence which strongly suggests that persons closely associated with individuals suffering from pneumonia in a large percentage of instances harbor in their mouths pneumococci of the same type as those causing the disease, that such organisms are not found in the mouths of normal individuals not exposed to pneumonia, and that the considerable period of time during which these organisms are carried may in part account for the sporadic occurrence of individual cases of pneumonia. An additional means of transmission is also afforded by the recovered individual.—(*Lancet*, Sept. 18, 1915.)

## THE NARCOTIC ADDICT, THE PHYSICIAN AND THE LAW.\*

ERNEST S. BISHOP, M. D.

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New York.

Three things must be considered in the handling of the present narcotic drug situation—the narcotic addict, the physician and the law. Three things must be completely investigated before there will be a solution of the problem—the narcotic addict and what he is; the physician and what he can do for the narcotic addict; the law and to what extent it can reasonably assist in the remedy of existing conditions. The failure of past effort, both medical and legal, to adequately deal with existing conditions has its explanation in the lack of understanding as to what the addict is and in lack of widespread appreciation of the condition from which he suffers. We have approached the situation in a most unbusinesslike manner. We have not studied the scope and character of the whole problem, but have put into execution remedies which were determined upon under the influence of those whose conception and vision were limited by the confines of their own individual experience.

As to what the addict is:—the police and penological authorities will tell you that the addict is criminal and vicious;—the institution alienist will tell you that the addict is mentally weak, defective or degenerate. The practitioner of internal medicine will tell you that narcotic drug addiction is a condition to which he has paid but little attention. The addict himself will tell you that he is sick. The police and penological authorities are right in some cases. The alienist is right in some cases. The addict is always right in this statement—he is always sick. In my experience with and study of narcotic drug addiction and of the narcotic addict,—an experience which began six years ago as Resident Physician to the alcoholic and prison wards of Bellevue Hospital, and has continued since leaving Bellevue Hospital with the addict in private practice, and the cases in the narcotic wards of the Workhouse Hospital,—the one constant and more and more strikingly emphasized observation has been the physical manifestations of pain and suffering. I have in my possession histories of addicts taken from all walks of life and from all classes and conditions of men. Some of my histories are of patients who were primarily defective, degenerate, weak or vicious. Some of my histories are of people of high mentality; of high ethical and moral standards; of high economic efficiency and social standing. These histories form a very instructive collection of material for the man, physician, alienist, sociologist or legislator who wishes to study the addict as he really is, and to get some conception of the diversity of the problems which he presents. Neglect of this study and absence of this conception is the chief cause of past failure. We have treated and legislated against all addicts as addicts, instead of appreciating that different classes of addicts present entirely different problems and require entirely different handling.

If we are going to consider all narcotic addicts as in one class we can with justice only consider those characteristics which are common to all members of that class. There is just one fact and characteristic which

\*Read at the March meeting of the Society of Medical Jurisprudence, New York, 1916.



stands out as of striking and paramount importance in every one of my histories—it is the fact of physical suffering. Whatever or whoever the narcotic addict was before his use of narcotic drugs—whatever had been the character and circumstances of the initial administration of narcotic drug—after a time, as I have repeatedly written elsewhere, after addiction has once developed, the history of every narcotic addict is that of suffering and of struggle. After addiction is once developed the addict loses whatever euphoric sensation he may have experienced, and all that narcotic administration spells for him is release from suffering. Without the drug of his addiction he endures intense physical agony. Without the drug of his addiction he cannot pursue a social economic, or physically endurable existence. He may have been primarily defective, degenerate, depraved or vicious; his primary administration of the drug may have been deliberate indulgence, disreputable associations, idle curiosity, any combination of conditions which constitute underlying mental deficiency;—he may have been an upright, honest and intelligent, hardworking, self-supporting worthy and normal citizen in whom the primary administration of narcotic drug was a result of unwise, ignorant or unavoidable medication. He may have been an ignorant purchaser of advertised patent medicines containing addiction forming narcotic drugs. Whatever his original status, mental, moral or physical or ethical, and whatever the circumstances of his primary indulgence; once addiction has been fastened upon him the vital fact of his history is the same,—subsequent use of narcotic drug means not pleasure, not vice, not appetite, not habit,—it means relief of physical torment.

I was a considerable time at my work in active charge of the Narcotic Wards of Bellevue Hospital before I adequately realized and appreciated this fact of physical suffering and was able to comprehend its vital importance. It is the fundamental fact in the existence of the narcotic addict. It should have long ago have been a matter of extreme importance to our clinical students and investigators and to our laboratory research workers. I have gone into it and have given my analysis of it elsewhere and shall not take up time for it here. Until, however, it is appreciated and widely understood, other endeavor is merely scratching at the surface of the narcotic drug problem. It is a most deplorable fact that out of the narcotic wards of our great charity hospitals, and that out of large private enterprises for the treatment of the narcotic addict,—some of them with consulting staffs of eminent physicians,—has come so little of scientific value to aid us in the comprehension and understanding of the obvious manifestations of physical disease processes in narcotic drug addiction. There has been a deplorable waste of valuable and plentiful material for honest, unbiased clinical study and widespread education. This is a condition which should be remedied, and the medical men should go into the narcotic wards and study and demonstrate the medical aspects of narcotic drug addiction disease.

The truth is voiced by the unvarying testimony of every addict of all classes that narcotic addiction is fundamentally and always physical suffering. The fundamental and basic fact is this, and it bears repetition,—that once addiction is established, deprivation of the drug of addiction spells physical agony and physical incapacity. Administration of the drug of addiction spells not pleasure and enjoyment; it spells relief of pain and restoration of physical energy and physical competency. Abuse of the drug of addiction spells ignorance and lack of education, medical and otherwise.

I have given you my conception of the addict. Addiction to me no longer spells vice and crime, and morbid appetite and weak-willed yielding to desire—it spells physical disease processes and measurable and demonstrable and material cause and effect. There are many phases and sidelights, classifications and differentiations to be made of narcotic addict. If we are going to establish solution to a general problem, however, we must establish fundamental truths which apply to all cases. The fundamental truth which applies to all cases of narcotic drug addiction is this—whatever may have been the circumstances, cause or environment of the primary administration of narcotic drug,—or whatever may have been the physical, psychical, ethical, personal or moral status of the person addicted, continued administration of a narcotic drug creates within the body of the person to whom that drug is administered a physical disease process,—a demonstration of material cause and effect in obvious symptomatology, in physical suffering and in nerve strain and exhaustion unless there is supplied to that person in sufficient amounts, the drug of his addiction. It is furthermore a fact that for the drug of addiction there are no substitutes and there are no antidotes. The drug of addiction is the only agency which will with therapeutic satisfaction alleviate the suffering of addiction, until by intelligent and comprehending clinical treatment and care the mechanism of addiction disease has been arrested. The individual addict may have any physical, mental, personal, social, economic status or characteristics. Whatever of these he has must be recognized and handled as they are presented in the individual case. The always present, striking and undeniable consideration is that every addict is sick of a disease condition which we have insufficiently recognized and left practically unstudied. And this is my picture of a narcotic addict,—a sufferer from physical disease. He has but two avenues of escape from his misery. One is by intelligent medical attention; and the other is by continued administration of narcotic drug. This is a statement of truth which we must some time face and must meet fairly and squarely as our basic issue.

What has the physician done for the addict? In the light of his experience and teaching he has done the best he could. It must be remembered that with the exception of the work of a very few men, practically no attention or consideration has been given to narcotic drug addiction as a physical disease entity worthy of clinical study and analysis. Attention has been distracted from the clinical physical disease symptomatology and phenomena presented by the narcotic addict. Medical literature, as well as lay literature, is practically confined to the consideration of the addict from the standpoint of mental manifestations and to the attempted discovery of panaceas, specific remedies, and more or less routine treatments and so-called cures. The study and observation of the alienist and neurologist within the field of their experience and special training are desirable and valuable. It is a deplorable fact, however, that widespread appreciation, study, and analysis of physical disease manifestations have not accompanied and co-ordinated with and modified the observations of the neurologist and alienist. The mere taking and supply of narcotic drugs has been the only issue considered and the physical disease mechanism at the root of the physical suffering which forced the addict to continue narcotic medication has received—except from a very few men—practically no recognition. In other words, the practitioner of medicine has had no education or clinical instruction in the handling of narcotic drug addiction disease. Like the addict he has

tried the various methods of which he read or heard and as a rule has failed. After failure he has either supplied to his patient the drug of addiction in the necessary quantities or has refused to treat him further.

This was about the status of the average physician before the advent of special narcotic laws,—an occasional cure but as a whole failure. About the only class of physicians which was accomplishing much in the treatment of the narcotic addict were the higher grade sanitarium men whose patients had sufficient time and money and could endure through to ultimate success a struggle of many months' duration. Of some of the spectacularly proclaimed and short duration special and specific treatments and cures great hopes were entertained. It is my opinion, however, in the light of my experience, upon the testimony of many histories, and from conversation with other physicians, that the widespread acceptance of these specific treatments and cures has been a misplaced confidence and an unwise credulity, and manifested lack of widespread scientific comprehension of the fundamental mechanism, and clinical appreciation of narcotic drug addiction disease.

The narcotic wards of our public institutions, to my mind, should, as a whole, have accomplished far more than they seem to me to have done. To a considerable extent they have practically ignored the study and analysis of obvious disease manifestations. They have either regarded the addict as a neuropath, or psychopath, or have applied to his case one or another of the supposed specific remedies or special treatments. Their failure to accomplish satisfactory results is evidenced, it seems to me, by the amount of emphasis which they lay upon convalescent accommodations, custodial institutions, farm colonies and social service assistance, etc.; all desirable adjuncts in many cases but poor and expensive substitutes for clinical and medical study, appreciation and treatment of existing disease.

What the law has done for the addict? Like the physicians, the legislators have done the best they could in the light of their knowledge, experience and teaching. Some of them seem to me, however, to have directed their attention unduly to a special class of addicts,—the addicts of the type which begins or ends in the so-called "underworld." These legislators have realized that the taking of narcotic drugs was rapidly spreading, and that it constituted a public menace in the class to which their attention was directed; and they applied the means at their disposal to the remedy of what they saw. Like the physician, they have centered their attention upon the mere taking of narcotic drug, and they have attempted to control by legislation the possession and use of narcotic drugs with too little study and appreciation of fundamental facts and of general basic considerations of widespread application. They do not seem to me to have appreciated the extent to which their legislation would affect the hundreds of thousands of upright and innocent and worthy addicts of whom they did not know, and who did not possess the fundamental characteristics of the class against which they legislated. They rightly directed their attention toward the control of the sources of drug supply and they rightly limited the legal ultimate supplying of drug to duly licensed and responsible medical men and medical institutions. The slogan of most of the special legislation has been to place responsibility for the supply and use of narcotic drugs squarely upon the shoulders of the medical profession. Such effort is wise, and this is where the responsibility belongs. And this is where the medical profession would have it placed in so far as the medical profession supplies narcotic drugs. The honest physician has no desire to dodge

responsibility for his handling of a narcotic addict to the best of his ability, nor should he have any objection to a reasonable responsibility and accounting for narcotic drugs used in that handling; especially since the taking of narcotic drugs has passed beyond medical administration and these drugs are non-professionally supplied and used to such an extent as to constitute a public menace. The non-medical supplying and administering of such drugs should not, however, be controlled in such a way as to unduly hamper their honest and legitimate use and deprive the worthy sufferer of their needed benefits.

The striking and important fact about which legislation has grown is illicit and irresponsible commerce in narcotic drugs. The class of addicts which constitutes a public menace is so supplied. With a few exceptions, it is not and has not been a part of the activity of the medical practitioner. It is almost never supplied through medical men and the channels of its distribution are entirely disconnected from the medical profession. In the rare and isolated cases where illegitimate traffic in narcotic drugs can be traced to a licensed physician, the protection of a license to practice medicine could be withdrawn by our constituted medical bodies. Our medical bodies should recognize this fact and co-operate in such cases with the legal administrators. We owe it to our own reputation and in our own protection. There must be some way to dissociate entirely, conclusively and finally the illegitimate and underworld traffic in narcotic drugs from the efforts of the honest physician to practice rational and scientific medicine in the help of the worthy and deserving narcotic addict. The regulation of the narcotic drug traffic of the underworld is not the business of the medical profession, and the burden of responsibility for it should not be placed upon the shoulders of the medical profession, and the consequences of it should not be made to react upon the head of the innocent addict. There must be some way to mete out deserved punishment to the occasional vampire of the medical profession who prostitutes his medical standing and the aims and ideals of his profession in the exploitation of the sufferer from narcotic drug addiction, without placing such legislative restrictions and annoyances upon the entire medical profession as make it impractical, if not impossible for the honest practitioner to honestly treat the honest addict. Here is a problem well worthy of the earnest consideration of our representative and authoritative medical bodies, and of their effort in co-operation with the legislative and administrative representatives. Such an activity would go a long way in the prevention of unduly restrictive and too widely applying narcotic legislation.

Legislation which limits to responsible and authorized classes possession and distribution of narcotic drugs, and which compels from the members of such classes reasonable accounting for such possession and distribution, is, under conditions which have long existed but only recently been sufficiently recognized, necessary and desirable. The Harrison (Federal) Law was a definite response to meet an obvious need. It is in its main intent and draughting a wise and unobjectionable piece of legislation. It provided for responsible possession and distribution, and it enforced accounting for the same, but it did not unwisely restrict nor hamper legitimate possession and honest therapeutic employment. The administrative ruling that constant reduction of dosage is regarded a evidence of good faith where narcotic administration is continued is a reflection of past medical teaching and of insufficient understanding of addiction disease and its rational



handling. There are serious and practical sociologic, economic and therapeutic objections to emphasis, beyond reasonable therapeutic indications, upon the mere element of amount of drug used by an addict. I shall go into this matter more at length in my paper before the American Medical Association next June. Fortunately, as I believe, this ruling can be remedied at any time without protracted legislative process, if the administrative authorities become convinced of its unwisdom. I believe that scientific study and understanding and appreciation of narcotic drug addiction disease conditions is all that is needed to supply the necessary information for conscientious executives, who are exercising their best judgment in the light of hitherto available and prevailing teaching.

The Boylan Law, which is our prominent piece of State legislation, seems to me to have been less wise than the Harrison Law. It required judicial interpretation to rob it of dangerous uncertainty and menace in its application to the honest physician. It was an especially fortunate fact that the first important decision in its application to the medical practitioner was broad-minded and comprehending of considerations other than mere drug supply and use. The issues raised under the Boylan Law in the case of *People vs. Hoyt*, were those which might easily have arisen in the practice of any honest and reputable physician in his handling of a case of addiction disease. An adverse decision would have increased the fear and uncertainty in which the medical practitioner administered to narcotic addicts, or because of which he refused to administer. The decision, written by Justice John J. Freschi, is wise, clear and illuminating. It specifically does not provide a loop-hole for the future use of an unscrupulous medical exploiter of addicts. It specifically states that if the defense of medical ministrations as urged, is shown to be mere subterfuge, it does not constitute legal protection. In other words it draws a line upon the vital point of difference between honest therapeutic supply and unjustifiable commerce in narcotic drugs. This decision placed the honest practitioner of medicine for the first time since the passage of the Boylan Law, in a position comparatively free from misunderstanding and from danger of undeserved persecution, and gave him information as to his rights as well as to his restrictions.

Those who draught restrictive legislation should remember that the possible administration and interpretation of the laws they draught are very important considerations, and determine the real effect of the laws often more than does the intent of the maker. The Boylan Law was undoubtedly wise in its intent. Until it had been interpreted, however, it was a serious obstacle to needed medical effort and help. One of its unfortunate results was that the average honest physician felt it hazardous for him to have anything to do with a narcotic drug case. This meant that physicians who would otherwise have helped innocent and deserving addicts to the best of their ability, felt themselves obliged in their own protection to deny to the addict any help at all. The unwillingness of the practitioner of medicine to assume the burdens of a potentially precarious position forced worthy addicts into less desirable methods of treatment, or into the underworld or illicit channels of drug commerce. The medical profession is greatly indebted to the judicial bench which sat in the *Hoyt* case for its wisdom, broad vision and clearness of recognition of existing facts and conditions, and for its rendering of a clear and illuminating exposition of the meaning and interpretation of the Boylan Law.

Too stringent legislation, restricting beyond reason-

able limits the care of the narcotic drug addict, simply makes it impracticable and dangerous for the average medical man to have anything to do with narcotic addicts, and drives the honest and deserving patient into the doors of this or that widely advertised cure, into the underworld, into the insane asylum or to suicide. Until we have provided scientific and clinical study and have thoroughly investigated present and possible medical treatment of narcotic drug addiction disease, and have established humane and effective therapeutic methods in the control of this disease, we have no right to deprive the honest addict of the only means by which he can remain a self-supporting citizen. The handling of the problem of the underworld supply is not going to be solved by too restrictive legislation of the honest physician. Legislation which makes it practically impossible for the honest physician to be connected with and conscientiously care for a case of narcotic addiction is a boon to charlatans and shysters and the illicit underworld traffic. A class whose profits will be materially increased by too restrictive legislation against the honest physicians are the owners and controllers of some of the various enterprises for the treatment of addiction by widely advertised specific methods.

An apparently innocent provision which has been under discussion for several years is one requiring special registration of an addict with some designated body if the supply of drug to that addict exceeds a period of three weeks. It seems to me that the only advantage of registering an addict after three weeks is going to be advertising material for institutions which claim to be able to cure addicts in less than three weeks. In the laws there is no provision for the investigation of the efficiency and scientific methods and results of the different so-called treatments and cures. Statements from those who know but one method may be innocent but dangerously misleading. In the opinion of very many honest workers in narcotic addiction, there is no method which can honestly promise to cure all addicts or even to withdraw drug from all addicts within a period of three weeks time. It is my opinion that enforced registration within a period of three weeks will drive many addicts in desperation to the institutions which advertise short duration cures. That a certain number of addicts can be cured within three weeks is beyond question. That a very large number of addicts cannot be honestly promised relief within any such time is, I believe almost the consensus of opinion of the honest students of narcotic addiction. Any legislation, therefore, which makes duration of treatment a consideration in the avoidance of public registration as a drug user places a premium upon hasty and perhaps ill-advised and unscientific methods. Such legislation is harmful and prejudicial to the rational study of narcotic addiction and to the competent care of the narcotic addict. The narcotic addict, whom desire to avoid registration drives to the undergoing of inadequate treatment is the one who will suffer; and the institution which advertises cure in an unduly short time is the one who will gain. Such legislation merely places a premium upon routine and hasty methods and militates against the scientific study and treatment of actual conditions in the individual case. It is difficult for the writer to see anything in favor of a three weeks' clause. If there is any reason for registering the addict at all, what is the reason for waiting three weeks? I can tell you this,—a narcotic addict after three weeks' incompetent treatment is in much worse condition and far more of a menace and burden to himself and to



others than he was before being treated at all. Either register all addicts or register none of them is the only rational way of procedure.

There has been talk of applying as much restrictive legislation to the sale, possession and use of hypodermic syringes and needles as to the narcotic drugs themselves. This means that special blanks, special records and certificates will be required for the possession and disposition of each of these commonly and widely used medical instruments. The fact seems to have been overlooked that in the underworld heroin is often sniffed into the nose through a goose-quill. Since a goose-quill is a common instrument of opiate administration, it would seem as reasonable to require the owners of poultry farms to account for and register the number of feathers on their geese. I have known addicts who were using opium in suppositories. Why not control the manufacture and register possession of all suppositories. I know of those who have become addicts through the application of ointments containing opium or its alkaloids. Why permit the unrestricted manufacture and use of ointments? Truly, were it not for the serious handicaps which such restrictions would place upon the possession of an instrument which is commonly and widely used for all sorts of medication other than the opiates, and are used far more in the administration of other medication than they are in the administration of the opiates, the situation would be humorous. As it is such restrictions would constitute a serious handicap upon the ordinary every-day practice of medicine and be of no special value in the restriction and regulation of narcotic drug addiction. In fact with the exception of a very occasional and fundamentally morbid case, who may acquire a so-called "needle habit," there are authorities on narcotic addiction who regard the hypodermic injection of the opiates as the least harmful form of administration. Certainly a smaller amount of drug is required to accomplish result, and the results are more constant, measurable, and lasting. It is about time that the hypodermic superstition died out. My experience with many addicts has been that what can be termed true "needle habit," or the morbid enjoyment of the prick of the needle, is very rare indeed, and that those who use the hypodermic needle in the administration of morphin or heroin, simply use it as the best, most economical and least harmful manner of administration. The patients whom I have questioned scoff at the suggestion that they derive any pleasure from the mere use of a hypodermic, and after body need for the drug of addiction has been removed I practically never see evidences of so-called "needle habit."

I have heard the statement made that the treatment of narcotic addiction should be legislated out of the hands of the practitioner of medicine. I have heard the statement made that the practitioner of medicine is not competent to treat a case of narcotic drug addiction. I must confess that some of those who made these statements had had practically no experience with narcotic drug addiction treatment and others showed no appreciation of the existence of a definite physical narcotic drug addiction disease mechanism. In other words, in my opinion, they were not competent in the light of existing work on demonstrable narcotic drug addiction disease to express an opinion upon the possibilities of the medical handling of the narcotic addict. The fact that ordinary every-day practitioners of medicine of the type who come to our New York post graduate schools, can go home and successfully treat narcotic addicts in the course of their practice, is illustrative of

the possibilities in widespread medical education. I have heard legislation advised which would restrict the treatment of addicts to a small number of specially designated men and specially designated institutions. In the present state of chaotic and widely diversified medical and lay opinion as to narcotic addiction and the narcotic addict, however, it would be a very difficult matter to select the men or the institutions qualified for such absolute control. The comprehension, study and investigation of narcotic drug addiction has entered a stage of evolution and development in which new facts and new truths,—both as to the addict and to the condition from which he suffers,—are being recognized and must be threshed out, correlated and co-ordinated with hitherto existing opinion before too restrictive legislation will be anything but narrow-visioned, premature and harmful.

The average physician may be and admittedly is inexperienced, inexpert and untaught in the scientific handling and treatment of narcotic drug addiction disease. His education and training, however, is the best hope we have for the alleviation of present conditions. Unwise and too restrictive legislation which makes it impractical or impossible for him to treat a narcotic addict is going to throw a burden upon society and a complexity of problems upon the municipal and state authorities which they will be unable to meet. A campaign of investigation and medical and lay education will require a much shorter time than the amendment or repeal of harmful and unsatisfactory laws, and will be far more effective in its immediate results. The narcotic wards of our great charity hospitals and the material in them should be thrown open to and utilized for honest, unbiased and trained clinical and sociological study. Recent laboratory experiments with the sera of addicted and non-addicted dogs have proven beyond argument that some substance in the blood of the addict is responsible for the symptomatology and agony of need for a drug of addiction. I elaborated a narcotic drug addiction disease based upon this hypothesis soon after leaving Bellevue hospital, but the time was not ripe for the general acceptance or consideration of narcotic drug addiction as a disease. Under present conditions, however, the time is not only ripe but the demand is imperative that narcotic drug addiction disease shall be widely and generally appreciated and studied by competent clinicians and the practitioner of medicine made familiar with its symptomatology and rational therapeutic control. Those who are framing our laws should as soon as possible be made to realize that they are not legislating against the mere continued use of a narcotic drug, but that they are attempting to control by legislation a firmly rooted and deep-seated disease condition whose incompetent handling spells agony and suffering for the unfortunate patient. They should realize that denial of the drug of addiction to an addict whose addiction disease mechanism has not been completely arrested spells long protracted suffering and physical inadequacy and mental and nervous strain and exhaustion, and the driving of honest and innocent sufferers into conditions and associations and modes of life which are not normally theirs and which are not theirs by choice, instinct or desire.

The average physician may be unqualified, inexpert and uneducated in the scientific treatment of narcotic addiction. It is my belief, however, that the average addict receives as much benefit from the average physician as he does in many of the advertised treatments and cures. At least he is not being seriously harmed and it is only a matter of time before the practitioner

of internal medicine can be educated to a comprehension of and ability to competently treat narcotic addiction. It is simply a matter of discarding old time fallacies and supposed panaceas and specific general cures and of getting down to a comprehension of and ability to clinically recognize, interpret and treat physical symptomatology. The ultimate solution of the problem of narcotic drug addiction is in the hands of the medical men, and it lies in the education of the medical men. Any legal restrictions which drive the care of the addict out of the hands of the honest medical man simply postpones the day when this ideal may be consummated.

The handling of the addict who is criminal or vicious belong within the province of the penological authorities just as does the handling of any other man who is criminal or vicious. The handling of the addict who is fundamentally degenerate, defective or mentally weak demands the attention of the alienist and neurologist just as does the handling of any other man who is degenerate or defective. Narcotic drug addiction disease in the man who is vicious or criminal or defective or degenerate demands competent and understanding medical attention and treatment just as does any other disease in the same man.

Within the province of the law belongs the handling of the criminal and vicious addict, and within the province of the law belongs such remedy as will eradicate illicit and irresponsible and unjustifiable traffic in narcotic drugs. If the illicit trafficker happens to be a physician he should have no more consideration at the hands of the law than any other criminal, and in its action the law should have the complete co-operation of the medical profession. Great care, however, should be taken that the sins of a guilty few are not visited upon the heads of a deserving many. Until the community provides competent and adequate medical care for its narcotic addicts and accords to the honest physician protection as well as restriction, the illicit traffic will continue and grow. I have been often informed that the illicit traffic in narcotic drug and the conditions surrounding it have not diminished or improved since the passage of the narcotic laws. This has surely not been due to lack of restriction upon the medical profession in general. Quite the opposite has been the case of many addicts whom denial of drug supply by physicians in fear of the law has driven into the underworld commerce. We should be very careful that our laws do not regulate and restrict the honest physician in his treatment of addicts to such an extent as to drive the honest addict out of the hands of the honest physician. Before we have more legislation we should have some education. Those who are handling the legal and lay aspects of narcotic addiction need education just as much as the medical profession needs education. Over-emphasis on any aspect resulting in premature, narrow, ill-considered and ill-advised legislation only increases the complexity of the situation and defers final remedy.

An immediate provision which is sadly needed is the establishing of some means of supply of drug in reasonable amounts and at reasonable prices to the present addict who has no source of available supply other than that of illicit commerce. Pending further study and investigation into narcotic drug addiction disease and the conditions surrounding it, and pending the determination of practical and desirable methods of handling the disease and the conditions, and the provision of adequate accommodations for ultimate cure of the sufferer; legitimate supply of the drug of addiction in

reasonable amounts fulfills a great economic and sociologic and medical need. The suffering from narcotic drug deprivation leads to more crime and personal degradation in the effort to secure relief than does the mere fact of use of the drug. The legal establishment of a means of cheap and reasonable supply to the present sufferer would be the severest blow to illicit traffic and to underworld commerce and criminal exploitation. Other States have made this provision. There is great need for it in New York.

There is no subject upon which philanthropy could more profitably expend its energy and money than upon the foundation of a research and investigation and education institution,—an institution not devoted to the persistent seeking for remedy along any special lines but to investigation into what constitutes present facts and into what constitutes the explanation of the facts which exist. We need some institution devoted to the study of narcotic drug addiction, an institution beyond the reach of bias from any source which will welcome and weigh, correlate and co-ordinate all that is offered to it from whatever source, before we shall have a true appreciation of the whole problem we are facing and before we shall have adequate remedial measures, medical, legislative or otherwise.

151 West 85th St.

#### SUPRAPUBIC PROSTATECTOMY.\*

HENRY H. MORTON, M.D.

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Brooklyn, N. Y.

The first case today is that of a man of 73, with an enlarged prostate. The history is interesting. The present trouble began several years ago. The patient noticed that he had to get up two or three times at night to pass his water. This increased frequency of urination became greater and then he noticed it during the day as well as at night. Increased frequency of urination at night is the first symptom occurring in the first stage of enlarged prostate. Finally, the patient consulted a physician, who found that he did not empty his bladder completely, denoting accumulation of residual urine and marking the second stage of hypertrophied prostate. He has been catheterized twice daily for the past two years on account of complete inability to pass water and distention of the bladder, and has passed into the third stage of hypertrophied prostate. Accompanying this retention there has been severe pain and vesical tenesmus.

When he came to the hospital the prostate was greatly enlarged. He was catheterized and a permanent catheter was left in the bladder for drainage. The urine was dark and filled with blood. The reason we emptied the bladder entirely when he came in (you will remember how often I have told you not to do that) was because his physician had passed a catheter on him several times and the bladder had already been emptied a number of times, so the only thing for us to do was to continue keeping it empty; therefore, we broke our usual rule and put in a permanent catheter. His general condition, however, was very good. Urinary examination showed the kidneys to be competent. The thalein secretion was excellent. After a week's drainage we decided to operate and chose the suprapubic route because the prostate was high up in the pelvis.

\* Clinic at Long Island College Hospital.



### Operation.

The bladder is opened in the median line. The left forefinger is placed in the rectum and the prostate enucleated through the suprapubic opening with the right forefinger.

While Dr. Read is closing up the belly wall, I will say a few words regarding this case.

In my preliminary examination, rectal palpation showed the prostatic hypertrophy extending high up on the posterior surface of the bladder.

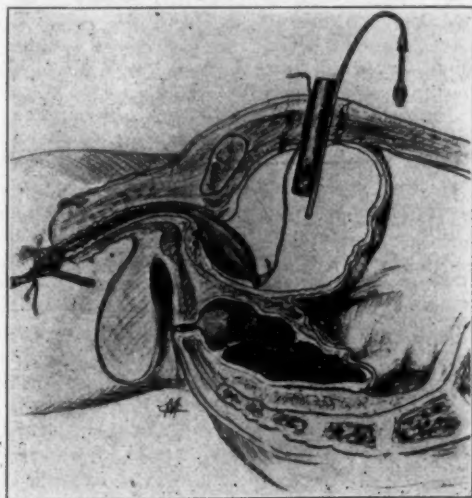
I could not examine the upper margin, as it was beyond my reach, thus showing that enucleation through the perineum would have been very difficult, while by



Hagner's bag inflated.

going in above the pubes the finger came easily in contact with the prostate and its enucleation was made feasible.

The next point that I would like to speak of is the control of bleeding. In these cases of prostatectomy through the bladder, one of the dangers is hemorrhage. We enucleate the prostate and have a large cavity filled with opened blood-vessels. There is nothing to stop them from bleeding and they pour out more or less blood. When we first began to do suprapubic prostatectomies, no one attempted to stop the bleeding at all. Then we had some pretty severe hemorrhages and it was found necessary occasionally to come down to the hospital in the middle of the night and pack the cavity of the prostate and bladder with gauze, so after a while we began looking into the bladder at the time of operation to see if there was any bleeding and if there was hemorrhage we packed with gauze. Sometimes the packing would not control the bleeding, and then we would have to fill up the whole bladder with gauze. About two years ago Dr. Frank Hagner, of Washington, who is a very active man in urological surgery, devised the bag which I used today.



Hagner's bag in place in prostatic cavity.

This bag is carried in and it applies itself to the wall of the prostatic cavity. The rubber tube comes out through the urethra and holds the bag in place. It is like the stay on the mast of a vessel. It keeps it from wobbling from one side to the other. The bag presses against the bleeding vessels and stops the bleeding.

Formerly we had been in the habit of using the large sized Freyers tube for bladder drainage. The object of using a large tube is that it allows clots to escape, but I am now introducing a tube only one-quarter inch in diameter through the suprapubic opening for drainage purposes.

The advantage of using a smaller tube is this: I have not infrequently noted fistulous tracts in the belly wall and the bladder, which would remain open for a considerable period. I have occasionally had to cut down weeks or months after operation and have found a hole in the bladder as big around as a 25-cent piece, which had failed to unite, and I believe the slow healing in these cases is very often due to the fact that the tube interferes with the closure of the bladder wall and stiffens the wound so that good apposition and coaptation do not take place. I think very likely the large tube of Freyer has something to do with the prevention of healing, so if we can use a small tube and take it out in twenty-four or forty-eight hours, we avoid the chance of having a fistula form in the bladder. It is very embarrassing to both the surgeon and patient to have a good, successful prostatectomy take place and the patient be able to pass his water all right and then some weeks after the operation have him start a stream out through a fistula in his abdomen. I hope that by using the Hagner bag and the small tube it will have the effect of stopping the bleeding.

I use silver wire to close the abdominal wound, because we go through and through everything. Wire does not suppurate and it acts better than silkworm gut because it makes a splint to hold the parts in place. I learned that in Paris some years ago at the Necker Hospital. I noticed they used silver wire as a routine to close the abdominal wall in all bladder cases, and I have adopted it since that time and find it works satisfactorily.

After the prostate is removed, the bladder walls do not collapse. In the undistended state, where there is no fluid in the bladder, it is a hollow organ and is closed. When it is distended with water you can put in it normally six, eight or ten ounces of water. Pathologically, it may hold a quart of water when it is over-distended, but when it is empty it is collapsed and empty.

### Suprapubic Incision for Bladder Drainage in a Case of Hypertrophied Prostate. Spinal Anesthesia.

The next case is also one of enlarged prostate, but it presents a great many different features from the one which we have just seen. I do not know of any condition which causes such a diversity of conditions as hypertrophied prostate, difference in conformation, position, symptoms, approach and in the method of handling and treatment.

This case is very interesting from a great many points of view. The man is 84 years old. The only point that he ever had with respect to his genito-urinary history was that five years ago he had a severe hemorrhage from the bladder which cleared up under treatment in a few days.

He says that for the past few days he has experienced gradually-increasing difficulty in urination and frequent desire to urinate. For the past two days he has been unable to pass any urine at all. His physician catheterized him and relieved the retention and with



the urine he found the man passed gravel and sand and suspected that there might be a calculus in the bladder. The patient came to the hospital and we examined him by rectum and found the middle lobe greatly enlarged and extending high up in the bladder, which means that it will be necessary to do the high operation in this particular case in order to remove the prostate. After a good deal of difficulty we succeeded in passing a catheter. We then tied it in place because it was difficult of retaining it in position. To prevent the urine from running out and to avert the possibility of the patient emptying the bladder himself, we put a plug in the end of the catheter and corked it up and in that way we gradually emptied the bladder—by withdrawing as much at a time as we desired. The bladder, after a few days of gradual emptying, was entirely emptied and then we began irrigations with nitrate of silver and forced ingestion of water by mouth in order to bring up the function of the kidneys. Then the permanent catheter came out, or probably the patient pulled it out as he was a little flighty. He was running down all the time, getting weaker, and his mind was becoming more and more clouded and it was evident that the form of drainage which we had attempted with a permanent catheter was not enough. I then decided, with a view to saving his life and preventing the absorption of the toxemia, that the only thing to do would be to open the bladder above the pubis, but not remove the prostate as yet—simply open the bladder as quickly as possible and put a tube in to keep the bladder empty and drained. When we have the bladder empty and drained we will be able to wash it out clean and prevent the back pressure on the kidneys. They will functionate better and we will stop the absorption from the bladder. I hope that the urosepsis will subside and that the old gentleman will gain strength and that the condition of the kidneys will permit of an enucleation of the prostate through the suprapubic wound. He has the characteristic urine of an old man with an enlarged prostate, low specific gravity, 1012, the presence of albumin, a considerable amount of pus and some blood.

In this case the man is so feeble and so weak that we do not dare to give him an anesthetic. Such an operation could be done under cocaine injected hypodermatically, but not very satisfactorily; so the proper anesthetic to use here is stovain injected into the spinal canal. We are using this more or less in certain selected cases as an anesthetic.

With the patient sitting up and bent forward, I plunge the needle between the vertebrae on a line one inch above the iliac crests.

I know that my needle is in the spinal canal because the spinal fluid is escaping, and I now attach the syringe and inject the stovain.

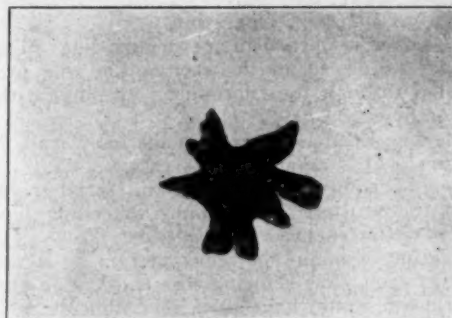
#### Operation.

The bladder is opened suprapubically. The cavity is explored with the finger, which touches a branched calculus. This is removed with stone forceps.

Further exploration reveals a large middle lobe projecting into the bladder like a ball valve.

A small drainage tube is introduced into the bladder wound and the bladder is closed with a purse string suture around it.

I found here the identical condition of the prostate that was present in the other man, a very large projecting middle lobe. I had the prostate right under my hand and could have taken it out, but it is a good deal better for the patient to wait until his condition improves before removing it. In from one to three weeks



Calculus removed from bladder of 84-year-old man.

he may be in such a condition as to stand a prostatectomy.

One word in regard to spinal anesthesia. In recent years we have begun to do a great many things with the spinal canal in the way of direct medication. We first began by injecting cocaine into the spinal canal and anesthesia was produced. The patient was conscious all the time, but the nerves, particularly those of the lower part of the body, were paralyzed and did not carry the sensation of pain to the brain. Cocaine, however, is a dangerous drug to use; it is uncertain and sometimes it has toxic effects. Then we began to use novocain. It is safer than cocaine, but the greatest of these drugs, from the standpoint of safety, is stovain. It is reasonably safe to use in the spinal cord. We have used it a good deal at the Kings County Hospital, and have found that we get anesthesia with very little resultant shock. Why did we select local anesthesia in this case? The man's feeble condition and damaged kidneys rather precluded an anesthetic such as ether, or even gas and oxygen, which would have been safer to use, so that of all the anesthetics at our disposal we selected stovain as being the one which in this particular case offered the least risk. I should, however, be sorry to see stovain in the spinal cord adopted as a routine anesthetic. I think we will always regard ether as our main reliance, at least as long as any of us want to take an anesthetic or give one. Of course, other anesthetics come in in selected cases, for special indications, but for a general routine anesthesia I believe that ether is the main standby.

I wish to emphasize the technique of giving stovain: The patient is bent over, as bending gives a greater degree of distance between the two vertebrae. About one inch above a line drawn from the crests of the ilium we strike the second lumbar vertebra and there we plunge the needle directly in through the cartilage, and in this way get into the spinal canal. When the spinal fluid escapes we know we are in the canal, because if we are not in the canal we hit up against the bone. Then we deliver our injection, which goes into the spinal fluid and anesthesia takes place a few minutes after. Stovain is lighter in specific gravity than spinal fluid and consequently it floats to the top of the spinal canal. In order to prevent paralysis of the respiratory muscles and sudden death, just as soon as the patient receives the dose of stovain we lay him down with his head lower than his sacrum and the stovain stays in the sacral part of the canal.

Q. How much stovain do you use, and how strong?

Ans. The formula for the solution we use is:

Stovain, .08.

Acid Lactic, .02.

Alcohol Absolute, .2.

Distilled water, 9s ad 2 c.c.

32 Schermerhorn Street.

## MEDICAL LEGISLATION IN THE UNITED STATES.\*

### 2.

CHARLES A. BOSTON, Esq.,

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New York.

An act of the first year of Queen Mary (A. D. 1553—1 Mary c. 9) would have pleased those enthusiasts of to-day who are sure of their exclusive mission (if only they be members of the Faculty), for it authorized the President of the College or Commonalty of the faculty of physic of London to punish offenders and transgressors of the said faculty, to commit to ward, gaol or prison for his or their offenses or disobediences contrary to any article or clause contained in its act or grant, until discharged by the president, and such persons as should be authorized by the college.

Here is an ante-type which our modern legislators so far as I know have overlooked, for they have not yet made the medical societies or boards or their officers accusers, judges and pardoning power all in one.

But old Dr. Bonham in 1606 somewhat clipped the wings of this law when he sued the censors of the faculty for false imprisonment, contending that he was a doctor of physic of the University of Cambridge and therefore not within the jurisdiction of the College of London. This afforded the court an opportunity to give a strict construction to the powers and privileges of the faculty, and also to make some pre-constitutional, constitutional law, for it not only construed the charter and laws as granting to the college and its censors no power to fine and imprison everyone who practiced in London without a license under seal of the college, but only those who so practiced for ill and not by the good use and practice of physic, and it also took occasion to criticise the censors as judges to give sentence, ministers to make summons, and parties to secure the forfeiture, stating in good Bill of Rights style that even an act of Parliament which conferred these three offices of judges, ministers and parties on the same body of men would be contrary to the common law and controlled by it, and would be judged void and would not be put in execution.

In this day of commissions, or would-be commissions, which partake or seem to partake of all three functions, we need a little more of that spirit of civic defiance either in the legislators or in the courts and among the people.

It is noteworthy, however, that at a later date this independent view of the judiciary was criticised by Lord Ellesmere and Chief Justice Holt.

In the fifth year of Charles I, he granted letters patent confirming the rights of the corporation of barbers and surgeons and extended their field of operation to London and Westminster and seven miles beyond, and provided for the examination and inspection of ship's surgeons, their medicines, instruments and chests.

In 1745 the Act of 18 Geo. II C. 15 separated the surgeons from the barbers for the improvement of surgery, without, however, abridging the powers of the College of Physicians, which it will be remembered had the power to license surgeons, as surgery was a branch of physick. Out of the Company of Surgeons thus separated in the days of George II has come the present Royal College of Surgeons of England: As respects the act of Henry VIII, forbidding barbers to use surgery or letting blood or any other thing belonging to sur-

gery, except drawing teeth; alas, now, I assume without following the subject too closely, that under the Modern Dentist's Act, even this remnant of surgical privilege is withdrawn from the noble profession of barber. It may, however, be a consolation to the practitioners of "the feat or craft of barbering or shaving," that the prohibition against surgeons invading their provinces likewise probably continued.

A third branch of the medical profession has long had legal recognition in England, that of the apothecary. The power granted to the faculty of physicians to inspect apothecaries' wares, seems, so far as I can gather, to have occasioned their venerable by-law (abrogated when the new and more liberal present-day medical laws went into effect) that physicians should not compound their own prescriptions; but the apothecaries did not reciprocate this act of self-sacrifice in the interest of the public health, for they secured the legal right to prescribe as well as to compound. Those of us who brush up our recollection of English fiction even up to and including the days of Dickens will recall the frequent references to the apothecary as the medical attendant of the humbler members of the community. The nature and extent of the business of apothecary was defined by law in 55 George III C. 194, and the corporation of apothecaries, now known as the Society of Apothecaries of London, still is empowered to grant licenses entitling its licentiates to registration in the medical register. But in 1886 a voluntary determination was made that thereafter no certificates or licenses should be granted by the governing bodies of the three branches of the profession (medicine, surgery and apothecary) unless the candidate passed qualifying examinations in all three. The distinction, therefore, in England is now not of the importance that it once was.

While the distinction is now, legally, of slight importance, it has, in its historic aspects been the subject of considerable litigation. An apothecary has been defined, in one suit, as a person who professes to judge of internal disease by its symptoms and applies himself to cure that disease by medicines. It is rather curious that such a concept of an apothecary has never obtained, so far as I know, in this country. This may be because they did not get into the full swing of legal privileges, invading the field which we ascribe to physicians, until the 55th year of George III in the year 1815. I confess that I have not pursued the subject far enough to discover their legal rights prior to that date, for their existence as a class is recognized in the legislation of Henry VIII, and the apothecaries of the city of London were incorporated in the 15th year of James I. It has also been said in another judicial decision that "apothecary" covers the mixing and dispensing of medicines and includes attendance and the giving of advice, which would be given by a physician who does not dispense medicine. So that the apothecary, historically considered, in England, while he does not invade the field of barber or surgeon, seems to have been legally authorized to occupy not only his own field as we understand it, but likewise that of the physician, excluding surgery. The domain of medical practice seems to have been like the farmer's garden fence, with two holes in it, one for the little chickens and the other for the big ones, for it was said in a decision in 1899 that *physician* in a technical sense applies to persons in the highest grade of medical practitioners, and it is used in that sense in the English statute, not in its popular sense of a person entitled to practice physic (e. g., an apothecary). What it formerly meant to be in the "highest grade" of medical practitioners may be inferred from a decision of Lord Kenyon in 1791 which

\*Abstract of Presidential Address Delivered May 22, 1915.



set aside a verdict for his fees obtained by a physician, his lordship saying that the fees of a physician were honorary and not demandable as a right. But neither surgeons nor apothecaries, duly licensed, have ever labored under that disability. It is rather curious, also, that though a physician as such was of such honorable degree that he could not recover in a court of justice for his services, but must depend wholly upon his honorarium, still, Chief Justice Denman in 1842 decided that if his services were surgical he could sue and recover. Does not this strike one as the measure of the difference between tweedledee and tweedledum?

The fact that a physician was restrained by a by-law of his college, so ancient as to be mistakenly considered a part of the law of the land, from compounding his prescriptions, yet was subject to the competition in his own field, of the man who did compound them, and that he was not able to sue for his compensation, while two invaders of his field, invading from opposite sides, and meeting in the middle, the surgeon and the apothecary, could sue and recover, would, under certain modern economic theories be a conclusive proof that physicians are a myth, for no latter day economist of an humbler sort could conceive that a profession could exist under such legal disabilities and in the face of such a competition. I do not know whether the economist, as a philanthropist, or the physician in fear or cupidity or envy, secured a change in the law, for under the present law physicians, surgeons and apothecaries alike have the same legal right to sue, if properly registered in the Medical Register.

I have dwelt longer than I anticipated upon the history of the English law, but I have done so because I deem it worthy of notice to this extent, in order to throw a side light upon the reasons and underlying principles of our own laws, and likewise because I think there is ground for serious reflection upon the proper development of American law, in the deliberate act of the British Parliament in 1858, supplemented in 1886, in throwing previous hoary historic concepts to the winds and starting in upon a new, thoroughly liberal policy, both emancipating the physicians from the restrictive bonds of the past and the unauthorized practitioner from the absolute prohibitions of the past.

If we should follow the same course we should certainly not have the annual trips to Albany and Washington and every other State capital in the land, to save the existing medical laws. The English Medical Law was passed in 1858, and was amended substantially in 1886; the colleges whose graduates are authorized to obtain registration determine their own curricula subject to forfeiture of their rights by order of the Privy Council on application of the General Medical Council, if their curricula get too lax, while in many of our States the medical curricula necessary to entitle students to admission to examination are carefully prescribed by rigid legislation and they differ very substantially in different States.

In 1893 I compiled for some medico-legal publishers the medical laws of English-speaking countries; in 1900 I set about the preparation of a second edition, assuming that the labor would be light. I found that the stereotyped plates for Great Britain scarcely needed a single change; indeed, I doubt if there was a single change; the laws of Canada had been elaborated to a considerable extent and somewhat changed; those of the United States were so much changed that to a very large extent they had to be rewritten. The new material was set up in type, but there was a delay of about four years in publication to suit the convenience of the publishers and the state of the demand for a second

edition. When the printer's proofs were finally sent to me for the latest corrections I discovered to my great horror, from the standpoint of the labor, that scarcely one-half, I should say, of the hundreds of pages which I had compiled but which were not yet published, were of the slightest use, so revolutionary had been the changes in the medical laws of the United States during the short interval of four years. If I should now be requested to furnish a third edition for publication I should view with despair the prospect of the task, after the former experience.

During the same interval there had been a natural progress but not a revolution in medical education and the surgical art. The statutes had grown enormously in detail and complexity; they had grown stricter in their prescription of curricula, in their requirement of preliminary experience, in their prohibition of unauthorized practice and in their penalties for violation by the unauthorized and irregular practitioner; but there was a curious parallel of special provisions for exceptional classes, such as osteopaths and in some notable instances an enlargement of the exceptions accorded to religious sects, and even as I have already said, in Connecticut in favor of that extremely valuable class of practitioners, the clairvoyants. So that it was evident that there are two steady lines of pilgrims to State capitals annually or biennially as the case may be, of those who go to have the bars raised higher and those who go to have bigger holes burrowed underneath for the burrowing class.

Thus is history repeating itself, in the twentieth century as it did in the sixteenth, with its alternate rigidity of medical requirements and enlargement of legislative exceptions in favor of those "whom God has endowed with a knowledge of herbs, etc."

The harsh operation of our system of medical laws is illustrated by some of the litigations which have arisen under them, for instance, the case of a border physician in Indiana who was summoned across the State border to attend a man who needed attention; he found amputation of a leg necessary, performed the operation and subsequently returned to dress the amputated member. Though not indicated for practicing medicine without a license, still in a suit for his fees, while the amputation was excused as within the legal exception of an emergency, the subsequent treatment was held to be unlawful and for this he could not recover; and thus was the merciful practitioner inferentially put into the criminal class.

In Colorado a confidential communication to a licensed physician is privileged from disclosure in evidence; but the testimony of a physician duly licensed in New Jersey has been held not to be privileged under the law, because though he attended his patient in New Jersey, where he was licensed, he was not licensed in Colorado, where the suit was brought.

In Georgia a physician practicing medicine and holding a diploma from the Jefferson Medical College of Philadelphia, was not competent to sit on a commission in lunacy because not a licensed practitioner of the State where the commission sat.

In Ontario, to which our American idea of prohibition and exclusive standards has spread, the adult population of an island in Lake Erie within the jurisdiction of the Province petitioned the Parliament to let them have a physician from Ohio who was willing to serve them because there was not a qualified practitioner in the Province who was willing to settle on the island, and the storms of the winters cut off the possibility of connection with the mainland for considerable periods, so that the lives of the inhabitants (of

whom there were two hundred adults) are actually jeopardized by a law presumably intended for their protection. So also in the Province of Quebec, special laws have disclosed that in at least two parishes there was no practicing physician, because apparently there was no resident who could or would comply with the strict requirement of the general law.

I have traced the high points in the development of the English laws, and in the most general way have outlined the principal characteristics and some few of the curious results of such laws as we have. It may not be uninteresting to trace with equal speed some of the high points in the history of our own medical legislation.

Massachusetts, the pioneer of much that is good was early in the field of medical legislation, for in 1649 a law forbade anyone except those skillful in the art to be employed at any time about the bodies of men, women or children, for preservation of life or health, as chirurgians, midwives, physicians; it is said that this law was substantially adopted in New York in the Duke of York's grant of 1665 and later followed in other colonies. But Maryland, the pioneer, in religious toleration still earlier in the field—on the economic side, however—for in 1638 it passed an act to regulate the charges of physicians.

Neither Massachusetts nor New York adhered to the course which they had thus early outlined, for in Massachusetts in 1837, the statutes prohibiting unlicensed practitioners from recovering their fees were repealed; only, however, to be followed after some interval by prohibitive laws, of which the present one penalizes unauthorized practice.

In New York, where the present law prohibits unauthorized practice, the laws, which in the form of restrictive statutes had been in force in one form or another since 1760, were in 1844 so far liberalized as practically to abrogate them. One interested in the medical and economic history of the United States would do well to note the coincidence or practical coincidence of the abolition of the privileges of the United States Bank, the panic of 1837, and the growth of homeopathy and of Thompsonianism with this era; an era of political and financial stress and great opposition to any special privilege, coincident to a certain extent with the development of two new schools of medical treatment.

The New England States, with their fond attachment to personal liberty, were in general the last to yield to the present impulse and to adopt the elaborate, detailed restrictive laws of the present day. As late as 1893 when I first examined the subject I was impressed with the simplicity and liberality of their laws; indeed Massachusetts and New Hampshire had none; and those of Maine and Rhode Island were simple in the extreme. Now, however, there is no substantial departure from the type prevalent elsewhere through the United States.

There have been historic successions of type from early times, beginning with either the political type, of license by State officials, or the medical type of license by medical societies or boards, and tending to a present day uniformity of general type of examination and license by a State Medical Board, under a prescribed minimum of time and subjects of study and of actual hospital or bedside experience, but with the greatest diversity of detail, and a great variety of specific exceptions, and a constant tendency to make special provision for special schools, and a constant tendency to differentiate branches of the art, with elaborate laws of the same general type, peculiarly applicable thereto, so that we now have osteopathic, homeopathic, electric, pharmaceutical, dental, optometry, chiropractic, veterinary, mid-

wifery, practitioners in public health and nursing laws. While under the earlier simplicity of the English prohibition system, no difficulty was found in issuing special limited licenses for people intending to treat in special manner or by special remedy. In 1561 under the English medical law a partial license was granted to an oculist, and licenses were granted to women, notable among which was a license to Mrs. Stevens' Medicine for the Stone; indeed for over two hundred years partial licenses were given, though by 1768, the tendency toward general licenses had fully developed.

This illustrates how a liberal law, though restrictive in its theory, may be made elastic to fit any given case. While under our rigid legislation, there must be a specific law for each case.

The introduction and spread among our people of peculiar schools of medical practice have always made their impress upon medical laws. To-day, it is osteopathy and Christian Science; a little earlier, it was mental healing; in the earlier half of the nineteenth century it was homeopathy and Thompsonianism; and even though a sect is not strong enough to make its impress upon the statutes, by way of exception, or special privilege, it then gets into the courts for violations of the law and serves to make judicial precedent; among these we find hydropaths and hypnotists, electro-therapeutists and root doctors, steam doctors and Turkish baths, apothecaries and aurists, bonesetters and clairvoyants, cuppers and druggists, faith healers and itinerants, kneaders and manipulators, mechanical galvanists and masseurs, medical students and metaphysical healers, ophthalmologists and opticians, palmists and physiognomists, all of whom have run foul of the restrictive medical laws, somewhere and somehow.

Hitherto I have considered the history and policy of medical laws. I can not close, however, without reference to their constitutionality. One of the most persistent attacks upon them is from the constitutional standpoint. It is to be borne in mind that the spirit of individual freedom and the protection of the single man from a tyrannical administrator or an unjust majority, is the fundamental principle of our bills of rights. And the constitutional history of this country has been the history of persistent attacks upon that theory; or rather of individual efforts to accomplish ends inconsistent with that theory. For I surmise that it is only in very recent times that the soundness of the theory itself has been seriously attacked. My own view is that this constitutional theory is responsible for the stability and growth of our institutions and the vast increase of our population. A government whose fundamental theory is the protection of the individual citizen, of whatsoever station, has still much to offer to the people of the world for their happiness. Laws which have as their end, suppression, have not far to go to accomplish oppression. And happily our constitutions, theoretically at least are set in and across the way of oppression.

Our medical laws have for the most part withstood the challenge of constitutionality; they have escaped the charge of unconstitutional oppression, on the ground that the power to make them rests in the legislature, in its exercise of the police power for the protection of the public health. The grounds of challenge have arisen under both Federal and State constitutions. These laws have been attacked under the Constitution of the United States as an abridgement of the privileges and immunities of citizens of the United States, as depriving of liberty and property without due process of law, as denying to citizens of another State the privileges and immunities of a domestic citizen, as impairing the obligations of contracts, as denying to persons within the



jurisdiction the equal protection of the laws, as being *ex post facto* laws, as impairing vested rights, as interfering with the exclusive jurisdiction of Congress over patent laws (in relation to patented proprietary remedies), and as being bills of attainder; they have been challenged under State constitutions as creating improper class distinctions or conferring unconstitutional special privileges, or as having an insufficient descriptive title, or as arbitrarily depriving of a right, or as creating unconstitutional bodies corporate (such as medical examining boards), or as conferring unconstitutional powers (such as the determination of the standing of colleges without adequate investigation), or as authorizing arbitrary action, or as violating rights of domestic citizens, or as levying an unconstitutional tax (e. g. a tax upon itinerant practitioners), or as recognizing unconstitutional exceptions (such as those founded upon religious beliefs), or as abridging the liberty of contract, or as creating offenses without sufficiently defining them, or as regulating subjects not germane to the purpose of the law, or as conferring public powers on private corporations (such as medical societies), or as recognizing differences based upon purely arbitrary distinctions, as authorizing the infringement of the powers of the judiciary, as denying rights without an opportunity to be heard, as establishing theories of medical practice under the patronage of the State, as disregarding constitutional requirements in their passage through the legislature, as attempting to include within the operation of the laws matters not within their reasonable scope, or not within the scope of the lawful supervision of public health, or of the police power, or as being absurd and therefore unconstitutional, as unreasonably limiting the period for compliance with new conditions, as authorizing medical societies or boards to proceed arbitrarily or oppressively, as imposing upon practitioners a method of practice which they disclaim, as depriving a citizen of his liberty of choice, as using a public power for private benefit, as confining the treatment of diseases to doctors of medicine, as requiring irrelevant examinations, or improper tests, as interfering with rights of conscience and of worship, as establishing unconstitutional rules of evidence, as interfering with the constitutional division of the government into departments, executive, legislative and judicial, as conferring judicial powers upon administrative bodies, and as conferring inconsistent powers of prosecution, adjudication and execution upon the same functionaries.

It is noteworthy that notwithstanding the numerous grounds of challenge, the most of the statutes have stood the test and have been pronounced constitutionally valid. That, however, has not always vindicated the wisdom or justice of the statute itself, and the discussion has evoked certain extreme views of constitutional limitations, for instance, in Nevada that the absurdity of particular medical legislation is no bar to its constitutionality, and in West Virginia, that it does not impair its constitutionality that it is arbitrary, unjust or oppressive.

One can not read such a mass of legislation with a view to philosophic criticism, without reaching the conclusion that much of it is ill-advised, emotional, unwise, ill considered and unnecessarily severe. It seems to me to proceed upon a doubtful theory, and to regard that as certain and fixed, which is constantly progressive and changing. It provokes the question whether the public need requires such drastic legislation when so many of our well-inclined, if mistaken, citizens believe they are being oppressed. If the protection of the public demands it, then let it proceed! But if the actual pro-

tection of the public does not demand it, then could we not afford to be slightly more tolerant? Indeed, is it not possible to consider the feasibility of the English system of letting all who will run, but to educate the public in a knowledge of those who have been duly prepared, and those who have not. Personally, I have an open mind, and stand for no heresy, schism, sect or irregular school. I am looking at the subject solely from the standpoint of historic and constitutional criticism. In this light it appears to me that there is much to condemn in the theory of our laws. I have in mind the lessons irresistibly inculcated by the illustrations in Andrew D. White's "Some Chapters in the Warfare of Science." And I doubt whether the public health requires the legislative mandate for its protection to any greater extent than the public morals require the establishment of a State church. I see danger that legislative interference may retard the growth of medical science, and I doubt if medical science requires legislative protection to the extent that it now demands and gets.

In thus addressing you I have no desire to be misunderstood. I have no personal propaganda and I am no iconoclast. I even doubt whether it is now possible to construct a new system of medical laws. But I have thought this a fitting opportunity to invite your reflections upon the history, tendency and purpose of medical legislation in view of the age-long counter tendencies to which I have thus called your attention.

#### NOTES ON SYPHILIS.

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Diagnosis from the primary lesion is often made, but is uncertain and unwarranted. Non-specific sores, having the classical features of the Hunterian chancre, are occasionally seen by every one with a large experience in such cases. To assume that every case is specific, even if a typical instance of chancre-like sore, would unjustly condemn to medical servitude and mental and moral suffering a great many patients. Even with a history of exposure, it is not possible to make a diagnosis from the primary lesion alone.

If the *treponema pallida* is found and identified with certainty, a specific character may be diagnosed with better reason. But is this commonly possible? Many cases have been thoroughly studied in which no syphilitic organisms were found, yet later on proved to be syphilitic. There are other spiral-formed organisms frequently found which resemble more or less the *treponema pallida* and the differential diagnosis can only be made, if at all, by highly trained experts.

Recall the fact that Neisser's diplococcus was early diagnosed whenever we found an organism of the described morphology, intracellular, staining with methylene blue. Then we were compelled to use the Bismark brown check stain to insure the identity of the gonococcus. Ask the laboratory diagnostician and he will tell you that even this is not sufficient to insure the correct identification of the organism, and that it is not a matter to be passed on by any except a trained expert. Probably the percentage of error is small, because the clinical evidence and history help out. But we know now that there are diplococci having the morphology and staining qualities of Neisser's gonococcus which are not gonococci.

Is it not possible that we shall find other spiril-formed organisms more closely resembling the H-S *treponema pallida* than any yet known? What proportion of so-called aborted cases of syphilis, diagnosed by the chancre alone, with or without the finding of supposedly syphilitic organisms, have been really specific cases?

Contrary to earlier teachings, the site of invasion by the infection does not necessarily develop either a typical chancre or any other change that can be observed. The organisms may pass through the intercellular (epidermal) lymph spaces into the lymph streams and possibly into the blood stream, instead of colonizing in the skin, in which case no change will take place which is discernible.

The Wassermann test is not available until the colloid, which reacts to it, is formed; and this may be before or after the secondary period is ushered in.

This test is, of course, of the greatest importance when correctly interpreted, but is only one element in diagnosis. One should know the exact method and technic of the serologist in order to derive the maximum of help from the report. The various modifications of the original Wassermann have advantages and disadvantages. In general, it can be said that the serologist who thoroughly masters one method will do dependable work. A strongly positive reaction may be considered a proof of syphilis. A weak or equivocal reaction, especially given by a modification of the Wassermann, may be very misleading. A single negative has no significance.

It would be possible to obtain the very best help from the serologist if data of the case were submitted with the specimen. The date of the infection, symptoms, medication, etc., all have some bearing on the interpretation of the reaction. It is a fact that some practitioners feel that if the test is good, the serologist ought to be able to say "your patient has syphilis" or "your patient is not syphilitic," from the reaction obtained. Indeed, the former is often possible. But it is a mistake to depend on the Wassermann alone for diagnosis. The burden of obligation on the clinician is no less. And to get real help from the laboratory some notes regarding the case make possible to the serologist a degree of helpfulness which is not otherwise to be expected. For instance, in examining for suspected syphilis of the aorta, different technic is employed.

In employing the Wassermann for the purpose of determining a cure, judgment must be used. No criteria are at hand whereby definite rules can be formulated. No one nowadays is excusable for pronouncing a case cured because of the absence of clinical signs of the disease and a negative serum Wassermann. Cases may give negative examinations for several successive tests and later become positive, both serologically and clinically. Yet the Wassermann is becoming daily more and more important as a part of the diagnostic routine and as a check on the treatment, while not as yet as thoroughly understood as we hope for in the future.

In the evolution of the subject of syphilis from blind empiricism into a rational and scientific subject, we owe a tremendous debt to the Wassermann test.

Diagnosis of skin lesions in the category of syphilis may be easy or extremely difficult. Probably in no other type of disease are mistakes oftener made.

Neither from reading nor from listening to didactic lectures can the physician train himself to distinguish specific from nonspecific eruptions. A broad observation of a great many cases is alone able to educate the

eye and understanding to a point where differentiation can be made with accuracy, especially in those types which furnish a resemblance to other maladies such as lupus and other tuberculides. Also the mucous membrane furnishes lesions easily mistakable for syphilis; notably the infection from Vincent's organism, apthae, etc.

Here again the clinician depends on the laboratory for aid in difficult cases. As in the skin eruptions, confusion arises when syphilitic symptoms are associated with non-specific lesions. It must always be kept in mind that the patient may have syphilis, even when the lesions investigated prove to be non-specific.

The recognition of visceral syphilis presents very great difficulties. The clinical picture varies greatly. Here again the fact of laboratory proof of syphilis is likely to induce the clinician to ascribe to syphilis any and all associated symptoms, whether they can be definitely proven to be of specific origin or are in no way dependent on syphilitic processes.

The pathology of syphilis is being worked out and this new knowledge will enable the future clinician to determine the nature of certain manifestations, at least in the autopsy, which in the past have only been guessed at. The responsibility of syphilis for the production of visceral disease, especially of cardio-vascular disease, is already proven to be of unsuspected range. It is not unreasonable to hope for greater success in the handling of these frequently grave conditions, when early recognition and specific treatment are possible.

Upon the question of prognosis in syphilis the widest divergences of opinion exist. On the one hand are the pessimists who insist that "once syphilitic, always syphilitic," and claim that the most that can be accomplished in any case is suppression of symptoms. On the other hand are the optimists who feel that few thoroughly treated cases defy cure, and that especially in early stages, barring complicating conditions, all cases should be cured.

Probably neither extreme of opinion is justifiable. As in all severe and dangerous maladies we are unable to say why this one responds to proper treatment and that one does not.

Equally various are the routines of treatment employed by equally clever syphilologists. Probably the greatest measure of success is achieved by those clinicians who take the broadest view of their responsibilities, and consider the general welfare of the patient rather than plan a hard and fast routine and adhere to it regardless of the special needs of the individual. After all, the patient who has Nature to fight his battles for him, has the best chance for recovery and no detail of examination and investigation of the health, habits, environment, and in fact any element that has to do with vigor and resistance should be neglected. No patient should be allowed to lose tone or become anemic. Tonics are indicated unless they are contraindicated, for no patient under treatment for syphilis should be allowed to show the need of them.

Before the advent of salvarsan thousands of cases of syphilis were apparently cured by mercury. Among the older syphilologists every one has seen patients symptomatically cured, who married without conveying the disease to their partners, who begat normal, robust children, who in turn have grown up without disclosing any stigmata of syphilis and in turn married and begat normal children who also show no evidence in any way of inherited disease.

Success in the treatment of syphilis depends on the vigorous treatment of the disease in its early stages.



The dosage of mercury must be adequate. It is all the mercury that can be exhibited without prejudice, and is not decided by grains, but by tolerance. Tolerance is to be established by the employment of every means in our power.

No doubt the most efficient means of administering mercury is by deep intramuscular injection. The intervals should be brief as possible. Where the treatments can be made daily, no doubt the result is better than where it is given at weekly intervals. The bibromate is, in the writer's experience, the salt of preference. Where daily injections are not possible, treatments may be given every second day; and where patients cannot manage to present themselves oftener than once in five to seven days, a suspension of an insoluble salt is necessary, such as the salicylate. Next in efficiency is the inunction. This should be made every day, rubbing successively (a) into the inner side of both legs, from the knees to the ankles; (b) then to the inner side of the thighs; (c) then to the abdomen and flanks; (d) then to the chest and sub-axillary spaces, and (e) last to the inner surfaces of both arms and forearms. Where the service of an assistant can be had, at least two more rubbings may be made to the back. And of course, the same cycle of rubbings is continued. Soon as the case is well under control, the mercurial treatment is interrupted every three weeks by a week or ten days of symptomatic treatment, by tonics, stomachics, etc. The urine is watched for albumen and evidence of metabolic errors.

The exhibition of mercury by mouth is least efficient and least scientific. No one knows just what will happen to the ingested mercury, nor how much of it will pass into the blood stream for the benefit of the patient. We do know that the treatment of syphilis requires a long period of medication and the continued medication by mouth in the majority of instances affects the digestive organs unfavorably, interfering with metabolism and nutrition, weakening resistance and effecting just what we ought to seek to avoid.

Where mercury is well tolerated by the digestive organs, courses of brief duration of this type of medication can profitably be sandwiched in between courses of injection and inunction, especially when the case is well under control.

Iodin medication, so thoroughly entrenched in our armamentarium, is probably not an antisiphilitic agent in the sense of being destructive to the organism of syphilis. But it has very valuable adjuvant action in the treatment of syphilis; first, in dissolving and eliminating the colloidal materials which tend to incapsulate the organisms and prevent the mercury or other agents from attacking them, and secondly, through their alternative action.

The former action is manifested when in latent cases or late cases where the Wassermann is either negative or equivocal, two or three weeks of iodine medication will often result in transforming the reaction to an unmistakable positive.

The iodide of potassium is frequently resented not only because of its unpleasant taste, but because it upsets digestion, interferes with nutrition and results in loss of weight, tone and resistance, to say nothing of the disturbing iodine reactions in the skin which are not infrequently seen. Other salts of iodine are often preferable and the syrup of hydriodic acid presents practically none of the objections which K I offers.

Without going into the present controversies concerning the role of iodine in syphilis, it is a matter of observation that patients whose treatment includes

iodine therapy average far better in the end than those for whom it is not employed.

When the period of treatment is reached where mercurial treatment can be interrupted for a week or ten days, this period may frequently be very profitably utilized in the exhibition of iodine; and where, especially in the later cases, it seems best to maintain the continuous administration of mercury, the biniodide may be dissolved in the syrup of hydriodic acid and a mixed treatment employed. Mixed treatment in pill or tablet form should not be employed as it is irrational and unscientific, and experience shows that it disturbs the organs of digestion and brings about the very states that it is our duty to protect our patients from.

The employment of salvarsan in the treatment of syphilis is now too well understood and appreciated to require more than a passing mention in these notes. Few remedies have been more abused, and rarely has a potent and dangerous drug been administered so crudely and imperfectly with such infrequent disasters.

Looking over the errors, it seems that the employment of water that is not absolutely freshly distilled, the employment of imperfectly cleaned and unsterile apparatus may be charged with responsibility for a part of the accidents and dangerous "reactions." There are those who have the outside of their needles and adapters, etc., bright and clean, although they allow an accumulation of broken down salvarsan and rust to accumulate in the lumen until it is almost occluded and who blame salvarsan for the fatalities or near fatalities which follow the entrance into the circulation of the poisonous and noxious substances.

The other frequent errors result from ignorance of the dosage and proper intervals between treatments. The tendency has been to employ far too large doses, especially in the beginning of the course, and to concentrate the remedy by using too little water.

More credit will be given salvarsan when the technic of administration is more generally understood and more conscience shown in its employment. The original idea of curing syphilis by one or few injections should be clearly understood to be an error and we should aim to give small doses at short intervals in connection with rational medication and perfect care until cure results.

#### FROST BITE.

##### With a Report of Three Cases in an Unusual Situation.

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During the winter three patients have come under my observation, who were suffering with frost-bite in a peculiar and hitherto unobserved location—the anterior surface of the neck. Two of these patients were seen in private practice and one in the Dermatological Department of Cornell University Medical College Dispensary.

Case E. M., a professional singer, was returning home one night, and was forced to walk two blocks against a severe and biting wind with the temperature near zero. At the time he was in evening dress and walked with head down and shoulders raised in order to protect himself as much as possible from the wind. In this way the circulation of a small area of skin became impeded. The next day he noticed a slight swelling of the skin about 2.5 cm. in diameter just below the chin on the anterior aspect of the neck; this was slightly tender on pressure. The next day when first seen by me the swelling was as de-

scribed, but the color was rather livid. The patch was moderately infiltrated and this infiltration was entirely confined to the skin. The subsequent course of the lesion was uneventful and in a few days had entirely disappeared.

Patient W. M., a broker, presented himself with a similar condition which had appeared the day after he had walked for one-half hour against the wind, during a sleet storm in March. I first saw him the second day following the exposure. At this time there was a patch, oval in outline, elongated transversely, about 3 cm. in its longer diameter and about 2 cm. in the lesser diameter, situated on the anterior aspect of the neck just above the collar line. The patch was dusky red in color, well defined and infiltrated; the surface presented a few vesicles.

The third patient was a tailor. When first seen the condition had been present for one day and followed exposure similar to that of the last patient. The lesion consisted of a patch 3 cm. long and 2 cm. wide, irregularly elliptical in outline, with its greater diameter transverse. There was a moderate infiltration confined to the skin, the surface was studded with fine vesicles, and was dusky red in color.

Usually dermatitis congelationis occurs in one of three clinical types comparable to the three degrees of burns. Most common is the ordinary chilblain or erythema pernio; a more severe type shows bullae and lastly, in severe frost-bite, one may see necrosis.

There is a rare type which resembles *lupus erythematosus*. I have seen two cases this past winter which belong in this group.

The first patient was a woman sixty years of age. She presented a circular patch on the tip of the nose which objectively was *lupus erythematosus*, but which has only appeared in the winter (for past three years) and which gives rise to the subjective symptoms of chilblain; that is, intense burning and itching when going from a cold atmosphere into a warm one. The patch was 1 cm. in diameter, sharply defined, bright red in color, showed central atrophy and the surface presented dirty gray adherent scales and follicular dilatation.

The second patient was an adult female with patches on the palmar surface of the fingers of both hands, which again were objectively *lupus erythematosus*, and left atrophic scars, but which appear only in winter. On the little finger of the left hand was a patch extending from the tip of the finger on the outside of the hand to a point midway between the meta-carpal phalangeal articulation and the wrist, which was a typical chilblain and showed none of the characteristics of *lupus erythematosus*.

Another type which is also uncommon resembles papulo-necrotic tuberculides. Two cases have been seen which show this type; both were adult males. The lesions consisted of discrete papules from 0.5 cm. to 1 cm. in diameter, situated on the fingers. The papules were dark red or purplish in color, considerably infiltrated and having a necrotic center. Upon healing a small depressed scar marked the point of the necrosis.

The pathology of dermatitis congelationis is that of inflammation. There is first a vascular constriction due to cold; this is followed by vascular paralysis and subsequent hyperemia. Exudation follows. Depending upon the length of time of the exposure, the degree of cold, and the resistance of the individual, all types of inflammation from slight hyperemia to extensive necrosis are to be seen.

The combination of dampness of atmosphere or ground or both with cold and high winds is most likely to cause the various lesions of chilblains and frost-bite. Those parts in which circulation is poorest are the usual sites of the complaint, fingers, toes, heel, outer side of foot, ears and nose. Predisposing causes may be any of the various diseases in which circulation or oxidation of the blood is impaired. A common local predisposing cause of chilblain of the feet is the wearing of tight, pointed-toed, high-heeled shoes and thin hosiery.

The local treatment, which I have found best, is the bathing of the affected part alternately with cold and hot water, for ten minutes twice daily. As a measure of prevention in those liable to the disease it is excellent.

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## THE TREATMENT OF SOME OF THE COMMON AILMENTS IN CHILDREN.

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### Acute Tonsillitis.

This is the most frequent disease in children, and because of its frequency it is looked upon as a mild and trivial affection which requires for its treatment a little calomel and a bottle of iron mixture. While in the majority of cases there are no complications or sequelae, tonsillitis is an important link in the chain of trouble which begins with the tonsils and ends with a crippled heart. The general treatment of tonsillitis is that of any other acute infectious disease. The little patient should be put to bed and kept there on a liquid diet till the temperature subsides, the bowels should be kept open with a mild laxative. Antipyrin and sodium salicylate in the proper doses dispensed with syrup of raspberries or orange and water may be given, a teaspoonful every 2 or 3 hours. Euquinin and salol or phenacetin and aspirin with sugar of milk may be given in powders, but children prefer liquid medicines, especially when made to suit their taste. The time honored iron mixture which is so much used is of doubtful value in this acute infection and frequently does more harm than good by upsetting the stomach and causing vomiting. It may do some good in the subacute and chronic tonsillitis when the child is not acutely sick, given a teaspoonful 3 or 4 times a day after meals or applied locally. I have treated quite a large number of children with acute tonsillitis and have never used this popular but disagreeable iron mixture, and my little patients have no cause for regret. Cold wet compresses to the neck are very useful and should always be applied, care being taken that they are properly placed under the angles of the jaw over the tonsillar region and changed every 2 or 3 hours. A spray or gargle with a dilute solution of hydrogen peroxide, followed by a dilute solution of liquor antisepticus alkalinus, does much good. To prevent repeated attacks of acute tonsillitis the mouth and throat should be kept in a healthy condition by a proper attention to the teeth and the daily use of some pleasant alkaline antiseptic gargle and mouth wash.

### Acute Cervical Lymphadenitis.

The cervical groups of the superficial lymph glands of the body are the most frequently affected in children because the areas they drain are frequently infected. Every group of inflamed or hypertrophied lymph nodes is a guide to some local infection. Affection of the glands of the neck may be traced to a primary source of infection on the scalp, face, nose, throat, pharynx, tonsils or mouth. The usual treatment of cervical lymphadenitis consists in the application of ichthyol ointment to the enlarged glands. This ichthyol ointment is being used almost like a specific without any therapeutic reason. In the majority of cases it causes suppuration with abscess formation and later scar tissue. In the few cases where it seems to do some good its action is tedious, its application is uncleanly and its smell is disagreeable. Ung. potassii iodidi, ung. credé and ung. iodoformi are used by some physicians for enlarged lymph glands with no more reason than the popular ichthyol ointment and with the same results. To treat properly cervical lymphadenitis, the source of infection must be primarily treated according to the condition and the place of infection. As a local application to the cervical glands a cold wet compress of plain water, properly applied and changed 3 or 4 times



a day, does more good than any ointment and is cleanly and has no disagreeable odor. *Liquor Burrowi* (*liquor alumini acetatis* 8%) a tablespoonful to a half or full glass of water, may be used instead of plain water, and seems to do more good. Tuberculous lymphadenitis and enlarged glands due to some systemic disease must be treated according to the underlying disease.

#### Poor Appetite.

Mothers frequently complain that their children do not eat enough. In the majority of cases these children look well nourished and the poor appetite is only an imagination of an over anxious mother. Some children suffer from anorexia and look poorly nourished. In these cases a general physical examination for some gastro-intestinal disease or some chronic ailment should be made. If the physical examination proves negative, the trouble is usually with the management of the child who eats what he wants and when he wants, but does not take sufficient wholesome food. The best treatment for such children is a proper and regular diet. A written or printed dietary list like the following with instructions as to the kind of food and the time for each meal for children over 2 years of age should be given to the mother.

Breakfast at 7:30 or 8:00 o'clock.

1. A well cooked cereal with milk or cream.
2. Bread and butter or buttered toast.
3. A soft boiled egg.
4. A cup of milk. Milk should never be given before a meal, because it takes away the appetite from solid food.

Dinner at 1:00 o'clock.

1. Soup with vegetables and a potato boiled or mashed.
2. Meat—beef, lamb or chicken, best when chopped.
3. Bread and butter.
4. Dessert—pudding, custard or apple sauce.
5. A cup of milk.

Supper at 6:00 o'clock.

1. A well cooked cereal with milk or cream.
2. Bread and butter.
3. A soft boiled egg.
4. Cooked fruit.

At 8:00 o'clock, a cup of milk.

Plenty of water between meals.

In some cases the following medication given to older children for a short time does much good in creating a better appetite:

Tr. *Nux Vomica* 4.0.

Tr. *Rhei Vinosa* 30.0.

Elix. *Gentianae Glycerinatum ad.* 60.0

Sig. A teaspoonful in a little water 3 times a day before meals.

#### Acute Diarrhea.

Diarrhea is a symptom of some disturbance in the normal functions of the digestive canal. It may be due to:

1. Intestinal infection.
2. Intestinal intoxication.
3. Intestinal indigestion.
4. Intestinal overload.

In cases of intestinal infection and intoxication the children are usually very ill and require individual study and special treatment. The majority of diarrhea patients coming to the physician are the result of intestinal indigestion or overload. Intestinal indigestion is caused by improper food or feeding. The children are slightly ill, have a poor appetite and general indisposition, the bowels move frequently and they have abdominal pain and slight fever.

The treatment in these cases consists mainly in the correction of the dietary errors. In breast fed infants nursing should be at longer intervals, while in bottle fed infants the milk modification should be low in sugar, or protein milk should be given. Partial starvation in the beginning of treatment, and a mild laxative with little or no other medication, is beneficial. If medicine becomes necessary for the control of excessive peristalsis, bismuth subcarbonate in fairly large doses and codein or tincture of deodorized opium or paregoric in small doses will serve the purpose well. There is no need for chalk mixtures, to which some enthusiasts add a variety of other drugs, including essence of pepsin, which makes it a heterogeneous incompatible mass.

The simplest cases are those which suffer from what I call intestinal overload. These children are perfectly healthy in every way except that their bowels move too often. They receive proper food and proper feeding, but too much of it, so that their intestinal tube is constantly overloaded and the diarrhea is nature's method of ridding the intestines of the surplus. The treatment consists in limiting the intake of food.

In all cases of prolonged or excessive diarrhea the body is drained of water and alkaline salts, the children become dehydrated and subject to acidosis. It is therefore important in these cases, whatever the condition and the line of treatment may be, to give plenty of water and some sodium bicarbonate. The water improves the circulation and aids in the elimination of toxins and the sodium bicarbonate prevents or neutralizes acid intoxication.

#### Chronic Constipation.

In infants and older children chronic constipation may be the result of gastro intestinal diseases, anal ulcers and fissures, congenital dilatation and hypertrophy of the colon and gastro intestinal atony due to some systemic disease as anemia, rickets or cretinism. In the majority of cases, however, chronic constipation is the result of insufficient food or a food that is too poor in those elements which leave a sufficient residue to stimulate peristalsis, or it may be due to irregular habits in bowel movement.

The rational treatment of this chronic ailment is not the constant use of medicines. If the infant is breast fed and the milk cannot be improved in quality and quantity, complimentary bottle feeding should be given. In bottle fed infants a modified raw certified milk, high in fat, with dextrimaltose instead of lactose, should be given. In older children constipation may be relieved by regular meals 3 or 4 times a day with a liberal supply of whole wheat bread, well cooked green vegetables and raw or cooked fruit. Plenty of water should be taken between meals. An active outdoor life and sufficient exercise should be insisted upon. Medically the following may be given for a short time and I found it to do much good in starting up a sluggish bowel:

Fl. ext. *Rhamni Purshianae Aromaticum* 15.0.

Syr. *Hypophosphitum Co.* 45.0.

Aqua *ad.* 90.0.

Sig. A teaspoonful in water 3 times a day after meals.

#### Cough.

An enlarged thymus, enlarged tracheobronchial glands and whooping cough without a whoop should be thought of as a cause of persistent cough. In all cases an effort should be made to make a diagnosis before treatment is begun. Chronic nasopharyngitis, hypertrophied tonsils and adenoids are frequent causes

for cough in children, but are as frequently overlooked and are treated with all kinds of cough syrups. A history of chronic cough, worse at night, is suggestive of nasopharyngitis or tonsillitis as the cause of the trouble. A careful inspection of the throat will be helpful in making the diagnosis. The treatment should be directed to the nasopharynx and tonsils. A mild alkaline antiseptic gargle or spray should be used. Syrup of iodide of iron may do some good, but in some cases surgical treatment may be necessary. A careful examination of the lungs will help to localize the source of irritation in the broncho-pulmonary system. A Von Pirquet test should be done in all cases of chronic cough. When a proper diagnosis is made the treatment is that of the underlying disease, but as a general rule in all cases of chronic cough tonic treatment, in addition to good food and fresh air, does much good. As a symptomatic treatment to relieve the cough, sodium bromide in 2 or 3 grain doses, according to the age of the child, given 3 or 4 times a day, is very useful.

#### Acute and Chronic Bronchitis.

Acute bronchitis in the majority of cases is very mild and little therapeutic attention is given to it, but mild neglected cases frequently lead to broncho pneumonia. The usual treatment consists in the administration of various cough syrups or so-called cough mixtures which irritate the child's stomach and keeps him constantly nauseated. There is no need for the irritating ammonium carbonate or liquor ammonium anisatum which is nothing more than ammonia water and alcohol flavored with anise oil, nor is there any necessity for the emetic syrups which make the child sick at the stomach. If an emetic is indicated to expel excessive bronchial secretion one or two fairly large doses should be given to cause the desired effect.

The treatment of acute bronchitis should be on the general plan of the acute infectious diseases. The child should be kept warm and in bed in a well ventilated but not cold room on a liquid or very light diet. Since there is no specific medicine for the bronchial inflammation, the indications are to keep the skin, kidneys and gastro intestinal tract in a proper physiologic condition. A warm bath or a mustard bath or a mustard compress to the chest, followed by the application to the body of one or two hot water bottles, will stimulate the skin and cause an increased peripheral circulation and increased glandular activity. An active peripheral circulation relieves internal congestion and reduces the temperature. Plenty of warm water should be given during the first stage of the disease to relieve the dryness and irritation along the trachea and bronchi. Steam inhalation may be given several times a day. A mild laxative should be given. Potassium citrate, spirits of nitrous ether, liquor ammonim acetate with some syrup of orange and water, given in proper dose according to the age of the child, will do much good. In the majority of cases under this treatment the child will be well in a few days and no other medicine will be necessary. In some cases, however, where the cough is excessive, ammonium chloride and sodium bromide with some pleasant syrup and water, given a teaspoonful every 2 or 3 hours, will do much good.

Chronic bronchitis is usually secondary to repeated attacks of acute bronchitis, cardiac or pulmonary diseases or chronic nasopharyngitis. The treatment is primarily of the underlying disease. An equable warm climate is beneficial. Tonics like iron, quinin and strychnine are indicated. Guaiacol carbonate with saccharated ferrous carbonate has given me good results.

### COLLES' FRACTURE: COMMENT ON THE USE OF EXTERNAL APPLICATIONS IN THE ACUTE ABDOMEN.

From the Surgical Clinic of

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#### Colles' Fracture.

**History.**—Patient male, thirty years old, enters hospital because of an injury to the wrist received two days ago. While the patient was running he tripped and fell; endeavoring to break the fall, he fell on his outstretched hand in hyperextension. On arising he noticed that there was a deformity at the wrist, described by him as a "hump" on the dorsal surface.

**Examination.**—We find here a typical deformity following a typical accident. You will note that the patient in falling thrust his hand forward to break the fall and thus the weight of the body was superimposed upon a hyperextended hand—This is the typical accident resulting in a Colles' fracture.

You will also note the typical deformity which consists of a dorsal prominent at the wrist, the hand being thrown to the radial side, and an undue prominence of the ulnar styloid—The typical accident therefore followed by the typical deformity are the pathognomonic factors in every Colles' fracture.

**Remarks.**—Colles' fracture, sometimes referred to as "silver-fork fracture" is a very common one, ranking next in frequency to fracture of the clavicle. The mechanical factors which cause it, and the pathologic conditions present have been the prolific source of medical debate for nearly a century. Dr. Colles of Dublin, was the first to give an accurate description of this lesion, and since his contribution, fracture of the lower end of the radius has been known as Colles' fracture.

Velpeau in observing the deformity, was impressed with its similarity to a silver fork and it is therefore often called "silver-fork fracture." There is no good reason why it should not retain the name of Colles, for while it is a fracture of the lower end of the radius, it is much more—it is a fracture of such distinctive characteristics that it is worthy of a distinctive name. It is no flight of fancy to observe the analogy between a Pott's and a Colles' fracture. They both have in common a characteristic cause, pathology, deformity and symptomatology. Pott's fracture means more than a fracture of the lower end of the fibula, and Colles' fracture means more than a fracture of the lower end of the radius.

*Colles' fracture is an impacted fracture of the lower end of the radius; occasionally the lower fragment is comminuted, but impaction is the rule. In the shadow-graph of the case before us you will observe that the impaction is clearly shown (Fig. I).*

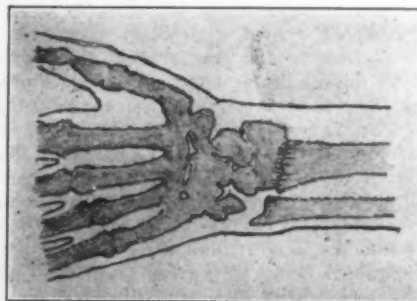


Fig. I. X-Ray tracing of Colles' fracture.



The circumstances under which the fracture is received play an important role in its pathology. When a person falls it is the natural thing to throw the hand forward for protection; thus, the hand in the hyperextended position receives the force of the fall and the blow is transmitted from the carpus to the carpal end of the radius, and fracture results.

**The Anatomic Factors in Colles' Fracture.**—(a) Note the fact that the radius is the "handle of the hand"—in other words, the hand follows the radius, not the ulna.

(b) The lower extremity of the radius is composed of spongy tissue. About three-fourths of an inch above its carpal end it joins the compact tissue of the shaft; hence, the weak point at this line of juncture.

(c) Of the two ligaments which bind the lower end of the radius to the carpus, the *anterior is thick and strong*, while the *posterior is thin and weak*.

(d) It is a well observed fact that spongy tissue of bone is often less resistant than the ligaments attached to it; hence, when the ligaments are strongly stretched they may pull away the fragment of bone to which they are attached.

(e) The patient be it remembered falls upon the hand when it is in extreme extension. Either one of two things must happen: (1) The anterior ligament must rupture and a radiocarpal dislocation take place, or (2) the ligament resist and tear off the lower end of the radius to which it is attached. The latter is precisely what occurs. The end of the radius is torn off at the weak point mentioned above because of the cross-strain imposed at this point (Fig. II).

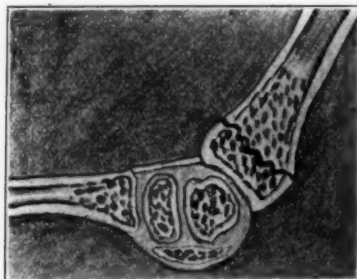


Fig. II. Showing action of radiocarpal ligaments and point where fracture occurs.

(f) As the spongy end of the radius is torn off, the weight of the body transmitted through the shaft, thrusts the end of the shaft into the spongy fragment, and impaction usually results (sometimes comminution).

(g) As the lower end of the radius is displaced, the triangular fibrocartilage is dislocated, causing an undue prominence of the ulna, a widening of the wrist as the radius and ulna are spread apart, and sometimes an avulsion of the styloid process of the ulna. An appreciation of these anatomic factors readily explains the five well-marked deformities which characterize the *symptom-complex of Colles' fracture*.

1. *Prominence of the fragment at the back of the wrist.*—This dorsal prominence is caused by the fragment being displaced upward and backward, and sometimes tilted on its own axis.

2. *The hand is thrown to the radial side*, giving the appearance of dislocation of the wrist. This is caused by the hand following the distal fragment to which it is attached by strong ligaments.

3. *Prominence of the ulna* is caused by the lower end of the radius being torn away from the ulna. The fibrocartilage is dislocated and there results undue prominence of the ulna.

4. *Widening of the wrist*, caused by the same conditions as those producing prominence of the ulna.

5. *Shortening of the radius.*—The backward displacement and the impaction causes a shortening of the radius, and is well shown by comparing the normal relation (the oblique line) of the radius and ulna with the same in a Colles' fracture, the transverse line) (Fig. III).

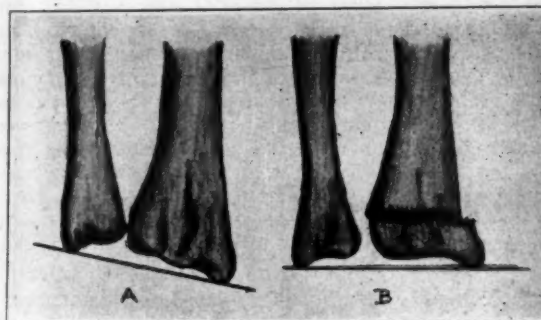


Fig. III. (A) Note the oblique line of the normal styloids. (B) The horizontal line in Colles' fracture.

In the normal wrist the radial styloid is about one-half inch lower than the ulna; in a Colles' fracture, the radial styloid is jammed upward so that the tips of the styloids are on a transverse line, or the radial may even be on a higher level than the ulna.

A most *important peculiarity* is the absence in most cases of crepitus or abnormal mobility of the fractured fragment, this, of course, is due to the impaction. This condition is so constant that in reducing the fracture it is difficult to dislodge the impacted fragment without great force, and reduction is seldom satisfactorily accomplished without anaesthesia.

**Manipulation for reducing the fracture.**—The patient having been anaesthetized we proceed to replace the fragment in its normal relationship with the shaft. Let us remark at the outset that this is by no means an easy fracture to reduce, and the very imperfect results which so frequently follow this fracture are due solely to imperfect reduction. The reasons for imperfect reduction are largely a lack of appreciation of the fact that the fractured fragment is locked, impacted, and must be disengaged before it can be normally replaced. In order to accomplish this, anaesthesia for securing complete relaxation is essential. Few are the cases of Colles' fracture that can be benefited without the aid of a general anaesthesia.

Colles' fracture is not an "office fracture," it is a "hospital fracture;" and if the fragment be accurately reduced, the special kind of splint used to retain it is of secondary importance. The problem of a Colles' fracture is one of reduction not retention.

In reducing the fracture we have found that the best results are obtained by placing the hand in the reverse position to that in which the injury was sustained. At the time of injury the hand is hyperextended and pronated. By supinating and flexing the hand the reduction can most easily be accomplished. With the patient completely anaesthetized the forearm is brought to a right angle and supinated. Traction is made upon the hand in the flexed position and counterpressure is made upon the upper fragment.

As this maneuver is done with steady traction and pressure the impaction is broken up and the fragment replaced. You will note that in this case the deformity has entirely disappeared and the parts have resumed their normal relationship.

### Reasons for This Manipulation.

1. The forearm is brought to a right angle and supinated, to relax the supinator longus muscle, attached to the displaced fragment.

2. Traction is made upon the hand in the flexed position because the strong anterior ligament which binds the displaced fragment to the carpus will thus directly pull the fragment into its normal position. The value of the strong anterior ligament connecting fragment and carpus has not been sufficiently emphasized. It is of immense importance in pulling the fragment into position as traction is made upon the flexed hand.

**Retention:** As already observed the kind of splint used to retain the fragment in position is of secondary importance. After accurate reduction is secured almost any kind of splint that comfortably immobilizes the wrist will be satisfactory. The only kind of splints to be condemned are the special splints ingeniously devised for this fracture. As a rule they do more harm than good by immobilizing the hand in an uncomfortable and abnormal position.

In ordinary cases we use a well padded palmar splint of bass wood, extending from the elbow to base of fingers, the splint being reinforced with pads at the wrist. The splint is held in position by adhesive strips and bandage.

In children this dressing may be reinforced by a circular plaster bandage.

### Comment on the Use of External Applications in the Acute Abdomen.

The number and variety of external applications used in acute abdominal lesions, and the frequent damage done the skin of the abdomen—a real handicap to aseptic surgery—lend an interest to their discussion, and a desire to estimate their true value. The external application of any drug must be countenanced only as it is based on physiological facts. Of what value is the application of hot fomentations containing opium, or of belladonna plasters for the relief of abdominal pain? Only the heat of the fomentation and the psychic effect of the plaster. It is a physiological fact that these drugs are not absorbed through an unbroken skin. Because opium and belladonna given by mouth relieve pain, it is not a logical deduction that when applied to the skin they will produce the same result. Belladonna has a paralyzing effect upon the nerve endings in glands and unstriated muscle, but not on the sensory nerve endings in the skin (Short). Furthermore, opium has no local effect upon mucous membranes. The opium suppository introduced after a hemorrhoidal operation has no direct local effect. It is true that morphia is absorbed from the suppository and produces a general quieting effect, but in this it possesses no advantage over a dose given hypodermatically and is less certain in action.

The only medicaments which relieve deep-seated pain when applied to the skin are counter-irritants. No one denies the relief which comes from the application of capsicum, tincture of iodine, thermo-cautery, ice-bag, in deep-seated pain, in lumbago, sprains, etc. How can the irritation of a cutaneous nerve affect a deep-seated inflammation? No one believes that the application of an ice-bag to the abdomen in a case of appendicitis in any way affects the temperature of the appendix; yet no one will question the beneficial effect of an ice-bag applied to an abdomen, the seat of an acute inflammation. The pain of inflammation is due to the stretching of nerve endings by the rapid injection into the tissues of inflammatory exudate. Relief from this pressure on the nerves can be obtained only by increasing the absorption through the blood stream, and absorption can be in-

creased only by vaso-dilatation. Head has shown that each segment of the spinal cord receives sensory impulses from a viscus and a corresponding skin area. Irritation of cutaneous nerves by counter irritants causes not only more blood supply to the skin area but also to the corresponding viscus. Not only this but observe that counter-irritants inhibit peristalsis. When you apply an ice-bag to an acute abdomen you not only relieve pain, you also inhibit peristalsis and secure rest to the inflamed part.

In applying medicaments to the acute abdomen—plasters, fomentations, stupes, counter-irritants, etc.—it is time that they were chosen with a proper appreciation of their physiological and therapeutic value.

394 Clinton Avenue.

## Correspondence

### Proctitis and Pruritus Ani.

TO THE EDITOR OF THE MEDICAL TIMES:

IN THE MEDICAL TIMES for December, 1915, there appears an article by Orlando R. Von Bonnewitz, M. D., of New York, entitled "The Cause and Treatment of Pruritus Ani, Vulvae and Scroti," in which the author claims to have made certain discoveries regarding the pathology of the conditions named, formulated a line of treatment therefor and perfected certain appliances for its proper administration.

In this paper Dr. von Bonnewitz has seen fit to make certain statements which I cannot permit to pass unchallenged, and I am quite sure that when the facts are known the readers of THE MEDICAL TIMES will be able to appreciate his position in the matter, as well as render tribute to whom it is due.

I am not questioning the pathology of these ano-rectal conditions as outlined, because it is correct; there is no fault to find with the treatment he advises, because it is both rational and curative; no improvement to the appliances he recommends is suggested, because they are properly designed, well constructed and entirely satisfactory in all respects; but when he assumes credit for the discovery of the pathology he describes, for its treatment and the means thereto, or in any manner conveys the impression that his paper is based upon original research by himself, he not only robs another of whatever honors may attend, but he places himself in an altogether undesirable light.

The pathological condition known as proctitis, of which pruritus ani is the principal symptom, as described by Dr. Von Bonnewitz, was discovered by Alcinous B. Jamison, M. D., of 43 West 45th Street, New York, in 1894, and from that time until now he has treated it successfully and contributed many papers to medical journals on the subject. In July, 1901, Dr. Jamison contributed a paper to *Health* entitled "Piles vs. Pruritus Ani." This was followed by a book entitled "Intestinal Ills," copyrighted in 1901, and in 1903 a second book, "Intestinal Irrigation" appeared. In these books pruritus ani, its causes and treatment, were fully described, just as Dr. Von Bonnewitz now describes them.

In 1908 Dr. Jamison contributed a series of ten papers to *Albright's Office Practitioner* in which a complete and comprehensive exposition of proctitis, pruritus ani, vulvae, scroti, etc., and their relation to other rectal diseases, was for the first time given to the medical profession. When the discovery of Dr. Jamison was first brought to my attention I became intensely interested, since it was so radically different from anything previously taught, and having been devoting some time to the office treatment of rectal diseases, and desiring to acquaint myself thoroughly with the "Jamison theory," as it was then termed, I arranged with him for a series of "office clinics," some of which were held in my office in Philadelphia, and some in Dr. Jamison's office in New York. In order that I might prove or disprove, to my own satisfaction, the accuracy of what the doctor claimed, I made more than twenty trips to New



York, and had the privilege of witnessing the treatment of hundreds of patients. That I became a convert to, and ardent advocate of, his "theory" is evidenced by the fact that when, in 1909, I published my book, "Rectal Diseases; Their Diagnosis and Treatment by Ambulant Methods," the results of our collaboration were fully reported, and the correctness of the "theory" demonstrated by a series of x-ray illustrations, reproducing photographs taken in the Dr. Caldwell laboratories in New York, under the supervision of Dr. Jamison, Dr. Arthur Holding and myself.

In this work Dr. Jamison is, of course, given full credit for his discovery, for his labors and continual efforts to establish a higher plane upon which these conditions might be placed, having long ago realized that no branch of medicine is so little considered and so generally neglected by the profession.

The somewhat general tendency to question the existence of these pathological conditions which was observed in reviews of my book, as also in papers published in some of the journals, has since given way to a much more tolerant attitude, and it is a fact worthy of note that in the past few years several rather prominent proctologists have seen fit to announce discoveries which are remarkable because of their similarity to those first described by Jamison. Some of these writers seem inclined to credit the "sub-mucous pocket" or "mucous ulcer" theory of Dr. Wallis of London (now deceased), which was published in detail in the London *Lancet* of January 9, 1909; yet it is evident that this gentleman never quite grasped the full significance of the tracts and ulcers noted by him, although he was doubtless on the right track. Jamison's first writings appeared at least eight years before anything of the kind was reported by Wallis.

In my book, page 126, there appears an illustration of Dr. Jamison's irrigating appliance, which is in all respects identical with the illustration shown in the paper by Dr. Von Bonnewitz. Shortly after the appearance of his paper in *THE MEDICAL TIMES*, a Philadelphia physician addressed a letter of inquiry to the doctor relative to his discovery and the irrigating apparatus. The following quotation from his reply lucidly states his position in the matter:

"\* \* \* The actual discovery of the channels was in a severe case where the patient had torn the skin from about the anus, and the opening could be seen quite distinctly. That was the only one I have ever seen like this. Long before this I had convinced myself that proctitis was in some way responsible for the intense itching. The reason I call this a 'theory' is because I am not able to lay down ironclad rules which do not vary, as would be necessary for other (sic) investigators to follow. \* \* \* The colon irrigator is made for me by The Hemroidal Co., 2030 Broadway. \* \* \* In the treatment of enlarged prostate the irrigator is nearly a specific, such as splanchnic neurasthenia."

A further inquiry as to the relation of the prostate and splanchnic (this is presumably the word intended) neurasthenia has remained unanswered.

The address of the Hemroidal Co., 2030 Broadway, is the same as that of Dr. Von Bonnewitz.

The paper by the doctor in *THE MEDICAL TIMES* for December, 1915, is not his first contribution along these lines. I have before me a reprint (without date) of an article which appeared in the *North American Journal of Homeopathy*, "Pruritus Ani, With a Successful Treatment," in which he states: "I was led to study this (pruritus) \* \* \* by seeing some original work along these lines by Dr. Jamison of New York, who was the first to advocate the existence of sub-mucous sinuses, as the cause of pruritus ani." Also one which appeared in the *Chironian*, April, 1912, entitled "Proctitis: Its Influence Upon Other Rectal Disorders." In this the same illustration of Jamison's irrigating apparatus is used, but no credit is given to the originator thereof.

When the foregoing statement of facts is considered in the light of the relationship between these two physicians, there is additional reason for criticizing the author of the paper under consideration. Dr. Jamison and Dr. Von Bonnewitz are first cousins, and their relations being entirely cordial, it is not surprising that the younger physician, Dr. Von Bonnewitz, should

be impressed with rectal diseases as a specialty, considering the professional and financial success of the elder, Dr. Jamison, nor that the latter should be interested in the material welfare of his young cousin, who had decided to locate in New York. In order that such helpfulness might assume practical form, the young man was presented with Dr. Jamison's books shortly after their publication; the series of articles already referred to he was privileged to read, and was presented with a bound volume containing them, through the courtesy of the author; and when my book was published, one of the first copies was presented to the younger by the elder cousin with his compliments and best wishes. He was also invited to attend at his office during the treatment of patients, so that he might become familiar with the application of the various remedial means.

Prior to 1910 Dr. Von Bonnewitz devoted his time to the general practice of medicine, but with the literature mentioned, and the knowledge of the interest shown and helpfulness extended by his cousin, it was but natural that he should decide to become a specialist in rectal diseases. This, it seems, he has now done, due, in a large measure, to the tutorship of Dr. J., who extended him every possible courtesy, and who, up to the present time, has furnished him with such of his remedies, appliances, etc., as were needed for the treatment of his patients.

During my visits to the office of Dr. Jamison I had the privilege of meeting Dr. Von Bonnewitz personally, also Dr. Arthur Holding, Dr. J. J. Moran and Dr. G. Lenox Curtis, all of whom were greatly interested in the study of the new pathology and highly appreciative of its value in the renaissance of proctologic methods.

J. D. ALBRIGHT, M.D.

3228 N. Broad Street, Philadelphia.

#### Editorial Axioms and Glittering Generalities.

To the Editor of *THE MEDICAL TIMES*:

Your March number contains some pearls of medical thought which deserve closer scrutiny. If true, they are interesting; if false, rather dangerous. I quote: "If a man have a lesion that really unfits him for life insurance he will surely reveal his unfitness when tested practically." Indeed? Kindly inform a seeker after knowledge what practical test will reveal the presence of acute nephritis, florid syphilis, or old purulent otitis media. I quote again: "If a man is a good revolver or rifle shot, why must we inspect his optic nerves?" On this point I will inform you. Because incipient locomotor ataxia, for one thing, decidedly reduces a man's longevity prospects while it may in no way prevent his hitting a target. There is much more of the same in your article on "Testing Men," but the samples should suffice. To paraphrase the concluding remarks of this article: "Our thoughts and suggestions may outrage the ultra-practical gentry, but we are addressing scientific physicians who can see the limitations of rule-of-thumb methods applied by rubbers and trainers on a running track."

I also find the following: "Evisceration should be performed in cases of panophthalmitis. It is quite free from the risks of septic meningitis, due to infection of the optic nerve sheaths." As it is not free, however, from the danger of setting up sympathetic ophthalmia, and as the various substitute operations are quite as dangerous, the best opinion, I believe, is to-day that evisceration should not be performed in any case, and that no operation should be performed in pan-ophthalmitis unless there are urgent indications for enucleation, the best operation under any and all circumstances. Once more: "Glaucoma is the ocular manifestation of a general toxemia with a local infection." This is an excellent and helpful definition from the standpoint of ocular therapeutics, but it is one-sided and too narrow and technical. From another and quite as scientific and illuminating an angle: "Glaucoma is the ocular manifestation of an hereditary anaphylaxis with local sensitization." It might even be claimed that "Glaucoma is the ocular manifestation of a psycho-neurosis with a local incoordination," or, possibly, "Glaucoma is the ocular manifestation of a general disturbance of internal secretions with a local fluid excess," or, finally, that "Glaucoma is the ocular manifestation of a general osmosis defect with a local colloid edema."

New York.

PERCY FRIDENBERG.

The answer to the first criticism will be found in an editorial in this issue entitled "Testing Men," which makes our position clearer than before. This editorial, which was written two weeks before the receipt of Dr. Fridenberg's communication, shows that we do not advocate the abandonment of technical methods now in vogue.—*EDITOR.*

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NEW YORK, MAY, 1916

## Articles on Syphilis.

Beginning with the current issue, THE MEDICAL TIMES will present every month an authoritative article on some phase of syphilis contributed by well known syphilographers. The first part of the initial article appears in this number and is entitled "The Pathology of Syphilis," by Faxton E. Gardiner, of the New York Polyclinic Medical School. There will follow in order: "The Clinical and Laboratory Diagnosis of Syphilis," by Henry H. Morton, Professor of Genito-Urinary Diseases and Syphilis in the Long Island College Hospital; "The Wassermann Reaction," by Alexander A. Uhle, of the University of Pennsylvania; "Prognosis of Syphilis," by D. A. Sinclair, Adjunct Professor of Genito-Urinary Surgery in the New York Polyclinic School of Medicine; "Syphilis of the Central Nervous System," by Walter J. Heimann, Assistant Professor of Dermatology in the New York Post Graduate Medical School, and "The Treatment of Syphilis," by Henry Clay Baum, Professor of Dermatology in Syracuse University.

## Sufficient and Efficient Medical Service in War.

The German Minister for War, in a Berlin dispatch in the *Washington Star* for April 3, in a report to the Reichstag, stated that Germany had plenty of soldiers and had even withdrawn from the lines men over 45 years of age. "The Minister said that he recognized that this was largely due to the excellent care given to the wounded."

In other words, a sufficient and efficient medical service was more than paying its way in promoting battle efficiency through military economies and the prevention of avoidable wastage.

The present proposed plan of the Senate Committee to cut down our own medical service below the proper

minimum standard of efficiency which was passed by the House of Representatives is a sample of short-sighted and wasteful policy.

It proposes to waste trained soldiers who might otherwise soon go back into the line and let the gaps that would otherwise be filled in this manner be filled by the slow, unsatisfactory and costly measure of enlisting, outfitting and training new recruits.

What would be thought of an automobile transportation company which failed to provide sufficient garages and machinists to make repairs to its cars, preferring to let these go to early wreck through lack of prompt and proper attention, and throwing these cars away as losses and buying new ones when a little efficient and timely attention could have kept them in service?

The most costly factor in war is the making of the trained soldier. A proper amount of personnel to keep the trained soldier serviceable is the greatest military economy.

## Mercurialized Serum.

In our issue of July, 1914 (p. 223), we proposed the use of mercurialized serum in the treatment of syphilis, particularly in luetic disease of the nervous system. Dr. C. M. Byrnes, of Johns Hopkins University, reported on the use of mercurialized serum in the *Journal of the American Medical Association* of December 19, 1914. In the May 1, 1915, issue of the same journal, Dr. Loyd Thompson reported further work along the same line. Dr. Byrnes administered it by the intraspinal route, and Dr. Thompson by way of the veins.

Our object in calling attention to the foregoing facts is not to claim that our suggestion led to the subsequent development of this most promising treatment on the part of Dr. Byrnes or of Dr. Thompson, who may never have heard of it. It seemed to us at the time we made this suggestion that such work was inevitable, and we merely foreshadowed it. We note the circumstance now merely to place on record priority in advancing and publishing the idea, unless it can be shown that we are in error on this point. We think it altogether probable that Dr. Byrnes conceived the idea independently, as so often happens in such matters. For its practical application, at any rate, Dr. Byrnes is entitled to all credit.

## Testing Men.

Our remarks in the March issue proposing a radical modification in the present method of estimating life expectancy interested a good many people. We know of no better test of a man than an attack of lobar pneumonia. If you have carried a man through a typical attack successfully you know the man thoroughly. Such a test is far and beyond more valuable than any of the relatively academic and static tests of life insurance workers. Examiners make feeble attempts to get away from static tests, as by having candidates hop around to determine cardiac sufficiency. But nothing is done whereby the pneumonia test is approximated. Now we cannot, of course, give a man a pneumonia test, but we can approximate the principle of the thing; just how we endeavored to set forth in general terms in the aforementioned editorial.

It is probably a fact that if a man applied for insurance just after an attack of lobar pneumonia he would be promptly turned down or laid over indefinitely. If this be true it well illustrates our point that the life insurance examiners seem to have little use for other than static and academic tests. Such a man has proved himself absolutely and the insurance companies ought to advertise for such policyholders.



It is our conviction that the methods in vogue are almost farcical; they do nothing to bring out the actual power of the organism. The physiological behavior of a man in vigorous action should be the criterion. Good points made in such tests should balance some of the technical demerits.

#### Euthanasia Long Drawn Out.

We suppose that one of the commonest fancies of the public consists in the belief that morphine given to a dying person shortens his life. As a matter of fact its prolongation of life in such circumstances is marvelous. How common it is to see the patient suffering, say, from a severe attack of cardiac asthma, snatched from the grave by a quarter of a grain given hypodermatically. Before the injection is given you have one of the most distressing pictures in the world: intense difficulty in breathing, air hunger, ghastly pallor, blue lips and extremities, icy hands and feet, wobbly heart, thready and inconstant pulse, cold sweating, etc., etc. You give the hypo and in half an hour the picture has changed utterly: the breathing has become relatively comfortable, the face is flushed, the pulse is full, the heart is steadied in a wonderful way and the extremities are warm.

We have seen the patience of tired out relatives often sorely tried because of the unconscionable time taken to die by the stricken one, after repeated doses of morphine. In fact, in such cases one may see the patient die a dozen deaths, as it were. The family is quite certain that the end is near, but because of extreme restlessness, or spasms of some sort, or difficult breathing a hypo is given, and lo, around comes the patient and takes a new lease of life. They say the patient has "rallied," and, then, several hours later, we hear that he is "sinking." Of course a point is reached at which the gradually attenuating cord of life snaps and the horrid picture ends.

This extraordinary conservation of the spark of life is the greatest of pharmacodynamic marvels.

#### The Alien Insane.

The taxpayers of New York have an enormous burden to support in the form of the alien insane, who constitute one out of every four patients in the State hospitals. It is because of their presence that the hospitals are so overcrowded and our own natives who happen to be inmates are deprived of proper service. For the work and expense of caring for these insane aliens the State is not reimbursed in any way by the Federal Government. Failing to keep such aliens out of the country, and neglecting to deport them, the United States should at least pay the cost of caring for these interesting charges.

#### Alcoholism and Democracy.

There would appear to be a rather definite relationship between alcoholism and democracy. One of the chief passions of democracy is the determination to make everybody like his fellows. You are unlike most of your fellows if you don't drink. The alcoholism of the masses seems from this point of view to be expressive of our unnatural crowd psychology, that is, it is part of the passion for alikeness that is artificially and intensively cultivated in the crowd by the conservative forces of society. It is carefully seen to that the crowd thinks and acts within certain well-defined, conventional grooves. This works well for most of our smug purposes, but there are some curious by-effects. Since the crowd can express itself only as such, the development of personality and individuality being suppressed, necessarily we have not only such phenomena as the movie craze, the dancing mania, machine politics, educational

standardization and the war spirit, which are sanctioned and utilized, but we also get alcoholism along with them, which the public, true to its training, has naively standardized too. Of course the masters of the circus have not wished it so, but because of their general methods of managing the show alcoholism follows as a natural though undesirable corollary. Perhaps some of them have, for it cannot be denied that certain strange purposes are served by alcoholism.

We shall always have to accept the alcoholism of the masses and bear with it, or something very like it, so long as it is necessary to keep our poor Calibans degraded industrially, economically and humanly, because if their lives are to be narrow, sordid, gray and painful they must have solace, anesthesia, narcosis and a succedaneum for life. How can we wipe out this Frankenstein without fundamental changes in the social order? It is they who painfully uphold that order, and not the Edward Carpenters, who are the most unpractical and malicious of dreamers, and the least regardful of human nature and of human rights. These leaders either have no souls or wings cannot be attached to them. What more quixotic spectacle could there be than that which we are at present witnessing—the attempt to rescue the people from alcoholism? True, we should wish to see them rescued from it, but what about that frightful treadmill now sardonically called life upon which we are driving them more intensively than ever and because of which they make drunken beasts of themselves?

After all, we care little about anything but efficiency, so called, and profits, and this mad passion for alikeness, over which things, instead of religion, war is nowadays waged. So goes on the brutalization of the human herd, with philanthropy's compensatory (?) program of "frightfulness" involving old-age pensions, charity, workmen's compensation, health insurance and all the other devices of our benevolent (?) feudalism—candy sticks which our poor beasts cannot withstand—in place of justice, which is to say a fair share of the profits of industry; in which ghastly program physicians are expected to play the part of retainers of the master class: candy sticks for the beasts, persuasive bludgeons for us; so are men bribed and coerced by our paternalistic Prussians, those blessed apostles who preach the dogma of property and who, as high priests of our national religion—the worship of the almighty dollar—officiate at the sacred shrine of the golden god; and so the transfusion of alcohol in place of blood proceeds apace in the body of that diseased and degenerate monster of precarious life yclept the proletariat.

#### Contraception.

We may now say two things about contraception certainly. One is that everybody knows what it is under one or another name, or under no name at all; the other is that everybody who wishes to practise it knows or can easily learn of some way. There can be but one possible excuse to-day for discussing the subject, and that is privately to instruct in good methods and condemn bad ones. Agitation to repeal the law against instruction is unnecessary for obvious reasons. Public howling on the subject is in bad faith unless it goes to the point, and then it would be in bad taste (though, of course, we should not expect the howlers to know or care what we mean by that), for what kind of people would they be who would want public instruction anent one of the most private and personal things imaginable? It is absolutely a private matter for careful individual determination, since a method which is valuable in one case may not be of any use in another. As a matter of fact, the profession is busy attending to the matter. - It must

be an uncouth and feeble-minded audience which, in New York, would listen long to a howler.

The many who are giving proper instruction every day wonder what all the howling is about on the part of people who boast that they never violate the law against such instruction.

If the howler ever served any purpose he is through now. Continued squawking will convict him of a simple craze for notoriety calling for discipline.

#### A Good Group Intelligence Test.

We are apt to fancy that the modified Binet tests are about the only devices for determining the mental age of folks. They are, so far as individuals are concerned. For the estimation of group intelligence we have some very good gauges. The movies, dancing, machine politics, idiotic hero worship, etc., offer criteria as to the intelligence of their devotees. To-day we have an excellent rough-and-ready way of determining professional intelligence, namely, how groups of medical men react to Health Insurance Acts. We should say that prompt killing of all such devices of our benevolent (?) feudalism, designed as they are to avoid the payment of decent wages, entitles a medical group to a certificate of normal mentality.

#### The Temple Veil Still Unrent.

Should not the physician be the very last man to scoff at the mystical, and to found skepticism as to spiritual things upon the artificial fertilization of sea-urchins by a Loeb, for who witnesses more mystical things daily than he? What more mystical than the artificial fertilization of a sea-urchin? When we say that we know more we usually mean that we can use more words about something. We really don't know what electricity is to-day any more than we ever did, but there is no end to our applications of it, and no end to the terminology. We think we know a great deal about immunity. Well, we don't; what we know a great deal about is Ehrlich's side-chain language. That man to whom no more mysteries remain is a weed of the schools, even a blighted one.

#### Another Phase of Exploitation.

Free service is being given by many physicians even under the workmen's compensation act. Only a few institutions give the moneys received in these cases to the doctors. Some institutions divide with the physician. We understand that in some cases the doctors themselves "donate" the moneys earned to their institutions. The whole miserable business constitutes an evasion of the act and one more phase of the everlasting exploitation of the physician.

In connection with this subject attention may be drawn to another abuse. We allude to the clinics which are beginning to charge fees of from one to three dollars, and probably more in certain cases, when people are able to pay such fees for special service, such as cystoscopy and x-ray work. We have been informed that in the case of one clinic the specialists who do this work are paid four hundred dollars a year, the clinic taking whatever remains. Such workers are clearly entitled to every cent earned at such rates, and their acceptance of such terms is a serious reflection upon their standards. There are other angles from which such work could be assailed, but the one point of economic exploitation condemns the system and everyone connected with it.

## Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

#### The Earliest Manhattan Practitioners.

Herman Meynderts Van den Boogaardt, surgeon to the ship *Eendracht*, arrived at and settled in New Amsterdam in 1631, being then nineteen years of age. Dingman Versteeg, the New York expert in Dutch matters, informs the writer that Van den Boogaardt was the first known physician and surgeon of Manhattan. In 1633, William Deering, surgeon to the ship *William of London*, visited the island. Dr. F. H. Bosworth, in his sketch, "The Doctor in Old New York," mentions Van den Bogaerdt—as he spells the name—as arriving in 1631, but dismisses him as a mere barber-surgeon. Dr. Bosworth names as the first regularly educated medical man Dr. Johannes La Montagne, a learned Huguenot practitioner, who arrived in 1637, at the age of forty-two. He had received his degree at Leyden and practised there for a number of years. He was apparently induced by his wife to emigrate to America, for she was a Rachel de Forest, and her family had already settled at New Amsterdam. La Montagne at once took a prominent place in the colony and held a seat in the Council under both Kieft and Stuyvesant. He acted as schoolmaster of the first public school, in the City Tavern, and commanded troops in the field when Fort New Hope was attacked by the Massachusetts colonists. In those days the physician had to be a versatile civic servant (and there is just as much reason to-day for him to be so). La Montagne died in 1670, it is believed in Holland, but his daughter Rachel married another early Manhattan doctor—Gysbert Van Lintoch.

But our good friend Dingman Versteeg has a great admiration for Van den Boogaardt, and it is our own judgment that this man, even though only a barber-surgeon, served the colony quite as efficiently as did the Leyden University man. He was appointed surgeon at Fort Orange in 1633 and is believed to have been the leader of a party which in 1634-5 arranged with the Senecas and Oneidas for closer commercial relations. In 1638 he went on a cruise to the West Indies, being part owner of the privateer *La Garce*. Upon his return he was appointed commissary of stores at New Amsterdam, and went on trading expeditions in this capacity among the Indians, for which his experience at Fort Orange had qualified him. In 1640 he commanded the yacht *Vreede* on a trip the object of which was to trade with the Raritan Indians of Staten Island and the country west of it. The Raritans were hostile and attempted, while the yacht lay in the narrow Kil van Kull, to overcome Van den Boogaardt and his party. They barely got away amid a shower of arrows.

In 1645 we find Van den Boogaardt commissary at Fort Orange. He it was who is supposed to have saved the life of Father Jogues, the Jesuit missionary, after his escape from the Mohawks. During his incumbency of the Albany post Van den Boogaardt endeavored to regulate the trade in furs, and to define the value of the beaver skin as expressed in seawan, the chief medium of exchange. He was a sensitive and at the same time an aggressive man, and had bitter quarrels with his enemies, meeting a violent death in 1647. He was burned to death in an Indian wigwam on the Mohawk, in which he had sought refuge from assailants.

When Governor Kieft took hold in 1638 he brought with him two surgeons, Gerrit Schult and Hans Kierstede. Nothing is known about Schult, but Kierstede



became a permanent and prominent resident, dying in 1666.

Dr. Peter Van der Linde also arrived in 1638. He was another versatile gentleman, for in 1640 he was recorded as an inspector of tobacco, and in 1648 as schoolmaster and clerk of the church. He did not get along well with Stuyvesant and left the colony.

Surgeon Paulus Van der Beeck came to New Amsterdam with a company of soldiers in 1643, to assist Kieft in his ill-advised Indian war. After the war he became the first medical man of Brooklyn, settling on a farm the site of which was at what is now the corner of Third Avenue and Twenty-eighth Street. He practiced medicine, worked the farm, collected tithes and was ferry-master, though in the latter capacity he was complained about to the Council for keeping passengers waiting "half the day and night before he would carry them across the river." This enterprising man probably found it difficult to be in two places at the same time—at the tiller of the ferry-boat and in the lying-in chamber. We may say at least this in his behalf, that the service given by his monopoly wasn't much worse than that of that present-day corporation facetiously known as the Brooklyn "Rapid" Transit. However, Van der Beeck got rich through his many activities.

In 1647, William Hayes and Peter Brucht practised in the colony, and between 1649 and 1652 there are notices regarding John Can, Jacob Mollenaer, Isaac Jansen and Jacob Hendrichsen Varvanger. Can, Mollenaer and Jansen were probably ship surgeons who practiced while their vessels were detained in the harbor. This they could do if Dr. La Montagne, acting for the Director and Council, saw fit to permit them. The ordinance passed by the Council governing this point is the first ever passed regulating the practice of medicine in New York. It was the business of Dr. La Montagne to determine the fitness of the ships' barber-surgeons. This ordinance was passed in response to a petition of the Chirurgeons of New Amsterdam. The Varvanger mentioned settled permanently in New Amsterdam and in 1658 was one of three men recorded as regularly established physicians, the other two being Hans Kierstede and Dr. L'Orange. Varvanger appears to have been the official medical officer of the Dutch West India Company, which controlled the affairs of the New Netherlands settlement, as Schult and Kierstede had been the official medical officers before him.

A word here regarding the distinctions made between chirurgion, barber-surgeon, etc., as used in early colonial times, will be in order. The designation of doctor did not come into use in America until about 1769. The practitioner of the seventeenth century was either a chirurgion, physician or barber-chirurgion. During the Middle Ages the priesthood acted both as physicians and surgeons, and practically monopolized medicine. Then two things happened which changed the system greatly. Because of certain abuses the clergy were forbidden to practise outside their monasteries, and the shedding of blood was interdicted. To hold their practice the clergy sent out the barbers who were attached to the monasteries (because of the shaven priesthood which had come into being). These barbers soon worked independently and finally became incorporated into crafts. The craft of the barber-surgeons of England was incorporated in the fourteenth century. It endured until 1745, when it split into two crafts, that of the barbers and the surgeons. After this there was keen rivalry between the barber-surgeons and the chirurgions. Hence we see the reason why the surgeons of New Amsterdam were anxious to restrict the shore activities of the barber-surgeons of the ships.

The West India Company, in its original charter, directed that comforters of the sick be appointed (*Zieckentroosters*). Among those officially serving in this capacity we find Eva Pietersen Evertsen, who received pay from the company under the first Governor. She must have been the midwife of the town, as Lysbert Dircksen was in 1638 (she was such an important official that a house was erected for her at the public expense at the order of Governor Van Twiller), and Tryntje Jonas was in 1644. Hellegond Joris was appointed midwife in 1655, and in 1660 the Council voted her a salary of one hundred guilders a year for attending the poor. But the office of comforter of the sick appears to have included other than obstetric practitioners; we suppose that these comforters corresponded roughly to what we call to-day "practical nurses." So that we see that the practice of medicine in New Amsterdam was divided among the chirurgions, the barber-surgeons, the comforters of the sick, and quacks. The quacks were busy as early as 1652. The Council licensed one quack, Pieter Le Feber, in 1653.

Resuming the thread of our narrative, we note Dr. Samuel Staats, son of Dr. Abram Staats of Fort Orange and Claverack. The father came from Holland in 1642 and settled for a time in New Amsterdam, for the son Samuel was born there. Samuel was educated in Holland and returned to practise in New York, where he became eminent. He died in 1715.

Jacob De Commer was the leading surgeon of New Amsterdam in 1660, but left the colony for Delaware. Dr. J. Hughes was a practitioner in 1661. Between 1658 and 1680 we note Peter Johnson Vandenburg, Cornelius Van Dyke, Henry Taylor, Herman Wessels and Samuel Megapolensis. The last-named was a son of the Reverend Johannes Megapolensis, who arrived in New Amsterdam in 1642. Dr. Megapolensis studied at Harvard College and at the University of Utrecht. He was a graduate in theology and also held the degree of Doctor of Medicine. He was appointed pastor of the church but also practised medicine until the end of his life. As one of the Dutch Commissioners he helped to negotiate terms with the English in 1664. Other practitioners at this time were Girardus Beekman, Michael de Marco Church and Giles Gaudineau. Gaudineau called himself a chirurgio-physician. He was a man of marked ability, was active in civic affairs, served as a lieutenant under Dongan in the war against the French and Indians, and in 1708 was a vestryman of Trinity Church.

The first *post-mortem* examination in America, so far as we know, was performed by Dr. Johannes Kerfbyle, a graduate of Leyden University, in 1691. He had settled in the colony at the time of the Dutch surrender and attained considerable eminence.

We have spoken of Jacob Hendrichsen Varvanger, the company's surgeon. He was a progressive and conscientious man and pointed out to the Director and Council, in 1658, that his ministrations to the sick soldiers and other employees of the company were counteracted by reason of the fact that they were improperly housed and cared for. He advised the establishment of a hospital. Such a hospital was thereupon started in December of the same year.

Varvanger, with two colleagues, Kierstede and Jacob N—, conducted the first coroner's inquest in February, 1658.

When the British took possession of the Colony a law was promulgated by the Duke of York which forbade practice upon the people without the advice and consent of accredited physicians. Moreover, the consent of patients was conditioned as well. Its object was stated to

be "to inhibit and restrain the presumptuous arrogance of such as, through confidence of their own skill or any other sinister respects, dare boldly attempt to exercise any violence upon or towards the body of young or old, one or another, to the prejudice or hazard of the life of limb of man, woman or child." So it would seem that we have departed somewhat from the wise practice of our fathers. It is to be regretted that such a law cannot be re-enacted to-day.

At the beginning of the eighteenth century, under English administration, there were about five thousand inhabitants. By the act to regulate the practice of Physick and Surgery of 1760, candidates were required to pass an examination to determine their fitness. Among the men of liberal education and wide culture of this time we may name John Van Buren, a student of Boerhaave, who received his degree at Leyden, Cadwalader Colden, Surveyor-General of the New York Colony and Lieutenant-Governor in 1761, as well as an eminent naturalist, Isaac Du Bois, a graduate of Leyden, who vigorously opposed the abuse of blood-letting, John Nichol, who sat upon the bench in Leisler's time besides practising medicine, John Dupuy, Frank Brinley, surgeon to the New York troops during the French and Indian War, Ebenezer Crosby, a professor in Columbia College, Charles McKnight, graduate of Princeton and surgeon in the Continental Army, John Bard, who practised for fifty-two years, was the first president of the Medical Society of New York, and performed the second dissection of a body in America, Dr. Samuel Bard, son of the former, a graduate of Edinburgh, who helped to organize the first medical school in New York and the second in the Colonies (1768—the Philadelphia school having been organized in 1765), as well as the New York Hospital in 1773, Richard Bailey, an authority on yellow fever, which during the seventeenth century was the city's greatest scourge, and a specialist in obstetrics, Nicholas Romaine, promoter of educational measures and one of the early presidents of the New York City Medical Society, Samuel Colossy, an Irishman who helped to organize the medical school, in which he held the chair of anatomy, Peter Middleton, who assisted the elder Bard perform the dissection already alluded to, and John Jones, graduate of Rheims and post-graduate of Leyden and Edinburgh, and professor of surgery in the College of New York, who developed clinical teaching to a high degree.

The faculty of the medical school of Kings College, now Columbia University, consisted of Middleton, Colossy, Bard, James Smith, J. V. B. Tennant and J. Jones, respectively professors of the Theory of Physic, Anatomy, Practice of Physic, Chemistry and Materia Medica, Midwifery and Surgery. In 1769, Columbia College conferred the degree of Bachelor of Medicine upon Samuel Kissam and Robert Tucker, but in 1770 the first degree of Doctor of Medicine ever given in New York was conferred upon Kissam, while Tucker received the same degree a little later.

Culpepper, writing in 1657, said that "The whole ground of physic is comprehended in these two words, sympathy and antipathy. The one cures by strengthening the parts of the body afflicted, the other by resisting the malady afflicting." This was the early New Amsterdam doctor's conception of the practice of medicine. Well, isn't it still a very good definition?

Seventy-six out of eighty-seven cases of typhoid fever which occurred in a recent outbreak have been traced by the United States Public Health Service to infected milk. Had the first cases been reported to a trained health officer the outbreak could have been stamped out promptly. When will we learn that disease prevention is sure and cheap?

## DIAGNOSTIC LABORATORY.

CONDUCTED BY CHESTER T. STONE, M. D.

Brooklyn, N. Y.

### Query.

As the Query Department has received numerous requests pertaining to routine urinary examination for the general practitioner, the answers will be combined as an outline including the simpler tests.

On receiving the urine note the color, odor, consistency, appearance and reaction. Take the specific gravity. Note the character and amount of the sediment. If possible get the amount voided in twenty-four hours. Test as follows:

**Albumin.**—Overlay 1 mil. (c.c.) of nitric acid with 1 mil. urine, set aside for 5 minutes and examine for white ring at point of contact. If urine is cloudy, filter first. If no albumin is detected by this method, overlay the same urine with 1 mil. Esbach's reagent, picric acid 1 gm., citric acid 2 gm., distilled water q. s. 100 mil. This detects smaller amounts of albumin and gives a white ring at point of contact. (N.B.—If the gravity of the urine is below 1.010, add Esbach's reagent to the tube first and overlay this with the urine.)

**Sugar.**—Haines' solution is preferable to Fehling's. Dissolve 30 gr. pure copper sulphate in  $\frac{1}{2}$  oz. distilled water, and add  $\frac{1}{2}$  oz. pure glycerin, and add 5 oz. liquor potassæ. Take of this 3 mil., boil and add 8 drops of urine. If sugar is present the copper is reduced as by Fehling's. Check all positive reactions with Nylander's solution as described under the Diagnostic Laboratory, page 91 of the March issue of THE MEDICAL TIMES.

**Indican.**—One mil. urine, 1 mil. hydrochloric acid, 2 drops potassium permanganate solution  $\frac{1}{2}\%$ , add  $\frac{1}{2}$  mil. chloroform, shake. If present, the chloroform is colored. A pink color in the chloroform generally indicates that the patient has been taking potassium iodide. For check test see April issue of this journal. If sugar is present test for acetone and diacetic acid.

**Acetone.**—Crush a small crystal about the size of a head of a match of sodium nitro prusside, place in a test tube and add 5 mil. of urine, shake till dissolved, add 5 drops glacial acetic acid and gently run a little ammonia upon the surface of the mixture. If acetone be present, a purple ring will form within a few minutes at the junction of the two fluids.

**Diacetic Acid.**—To 10 mil. urine add 5 drops 30% acetic acid, 5 drops Lugol's solution, add 3 mil. chloroform, and shake. The chloroform does not change color if diacetic acid be present, but becomes reddish-violet in its absence.

**Bile.**—Bile-pigment gives the urine a greenish-yellow, yellow or brown color, which upon shaking is imparted to the foam. Precipitate with lime water, filter, and touch filtrate with a drop of slightly yellow nitric acid. A play of colors, green to violet, denotes the presence of bile-pigment.

**Uric Acid.**—In a centrifuge tube take 10 c.c. urine and add 1 gm. (about 1 c.c.) sodium carbonate and 1 to 2 c.c. strong ammonia. Shake until the soda is dissolved. The earthy phosphates will be precipitated. Centrifugalize and pour off all the clear fluid into a graduated centrifuge tube. Add 2 c.c. ammonia and 2 c.c. ammoniated silver nitrate solution. Let stand a few minutes, then revolve in centrifuge until the bulk of precipitate remains constant. Each one-tenth c.c. of sediment represents 0.001176 gm. uric acid. (Ammoniated silver nitrate solution: Dissolve 5 gm. AgNO<sub>3</sub> in 100 c.c. distilled water, add ammonia until the solution clouds and again becomes clear.)

**Chlorides.**—See April issue or use the following: Fill a graduated centrifuge tube to 10 c.c. mark with urine; add 15 drops strong HNO<sub>3</sub> and then add AgNO<sub>3</sub> solution (dram to the ounce) to the 15 c.c. mark. Mix by inverting several times. Let stand a few minutes till precipitate forms, then revolve in centrifuge for three minutes at 1200 revolutions a minute. Each 0.1 c.c. of precipitate equals 1 per cent. by bulk. The normal is about one-twelfth the bulk per cent.

Phosphates and sulphates have but little clinical value, so will be omitted.

**Urea.**—Fill the ureometer with 25% caustic soda solution. Add to this 1 c.c. bromine and mix well. Run in 1 c.c. urine and, when the bubbles have ceased to rise, read off the height of the fluid by the graduations upon its side. This gives the amount by weight of urea in the urine added, from which the amount excreted in twenty-four hours can easily be calculated.

The **Diazo reaction** requires careful attention to technic. Certain drugs as creosote, tannic acid and its compounds, opium and its alkaloids, salol, phenol and the iodides interfere with or prevent the reaction. The reagents are:

- (1) Saturated solution of sulphanilic acid in 5% HCl.
- (2) 0.5% aqueous solution sodium nitrite.
- (3) Strong ammonia.



Mix 40 parts (1) and (2). In a test tube take equal parts of this mixture and urine, pour in one or two c.c. ammonia upon its surface. If the reaction be positive a garnet ring will form at the junction of the two fluids, and upon shaking a pink color will be imparted to the foam. A doubtful reaction should be considered negative.

Having completed the chemical, do a careful microscopic examination. (It is to be borne in mind that some of the above tests may be omitted from general routine examinations in absence of indications, while in other instances special tests must be introduced.)

A discussion of the microscopic examination of urinary sediments will appear in a latter issue.

#### Alterations in Appearance and Chemic Changes Produced in the Urine by the Entrance of Certain Drugs Into the System.

(Continued from the April issue.)

To discover the presence of *acetanilid* and *phenacetin*, evaporate the urine by gentle heat to about half its volume, boil for a few minutes with about one-fifth its volume of strong hydrochloric acid, and shake out with ether. The ether is evaporated, the residue dissolved in water, and the following test applied: To about 10 c.c. are added a few c.c. of 3% phenol, followed by a weak solution of chromium trioxid (chromic acid) drop by drop. The fluid assumes a red color, which changes to blue when ammonia is added. If the urine is very pale, extraction with ether may be omitted.

**Arsenic.**—Gutzeits test. In a large test-tube place a little arsenic-free zinc and add 5 to 10 c.c. pure dilute hydrochloric acid and a few drops of iodine solution (Gram's solution will answer), then add 5 to 10 c.c. of the urine. At once cover the mouth of the tube with a filter paper cap moistened with saturated aqueous solution of silver nitrate (1:1). If arsenic be present, the paper quickly becomes lemon-yellow, owing to formation of a compound of silver arsenide and silver nitrate, and turns black with a drop of water. To make sure that the reagents are arsenic free, the paper cap may be applied for a few minutes before the urine is added.

**Atropin** will cause dilation of the pupil when a few drops of the urine are placed in the eye of a cat or rabbit.

**Lead.**—No simple method is sufficiently sensitive to detect the traces of lead which occur in the urine in chronic poisoning. Of the more sensitive methods, that of Arthur Lederer is probably best suited to the practitioner. It is essential that all apparatus used be lead free. 500 c.c. of the urine are acidified with 70 c.c. pure  $H_2SO_4$ , and heated in a porcelain dish. About 20 to 25 gm. of potassium persulphate are added a little at a time; this should decolorize the urine, leaving it only slightly yellow. If it darkens upon heating, a few more crystals of potassium persulphate are added, the burner being first removed to prevent boiling over; if it becomes cloudy, a small amount of  $H_2SO_4$  is added. It is then boiled until it has evaporated to 250 c.c. or less. After cooling, an equal volume of alcohol is added, and the mixture allowed to stand in a cool place for four or five hours, during which time all the lead will be precipitated as insoluble sulphate. The mixture is then filtered through a small, close-grained filter paper (preferably an ashless, quantitative) and any sediment remaining in the dish is carefully washed out with alcohol and filtered. A test-tube is placed underneath the funnel; a hole is punched through the tip of the filter, and all of the precipitate washed into the tube with distilled water, using as little as possible, generally 10 c.c. The fluid is then heated, adding crystals of sodium acetate until it becomes perfectly clear.

It now contains all the lead of the 500 c.c. urine in the form of lead acetate. It is allowed to cool, and hydrogen sulphid gas is passed through it for about 5 minutes. The slightest yellowish-brown discoloration indicates the presence of lead. This can best be detected when looked at from above. For comparison, the gas may be passed through a test-tube containing an equal amount of distilled water. The quantity of lead can be determined by comparing the discoloration with that produced by passing the gas through lead acetate (sugar of lead) solutions of known strength. One part of lead acetate crystals contains 0.54 parts lead. Hydrogen sulphid is easily prepared by placing a small quantity of iron sulphid in a test-tube, and adding a little dilute HCl, insert a cork containing a delivery tube, the other end of which is placed in the fluid to be tested.

**Mercury.**—Traces can be detected in the urine for a considerable time after its use.

About a liter of urine is acidified with 10 c.c. HCl, and a small piece of copper-foil is introduced. This is gently heated for an hour, and allowed to stand for 24 hours. The metal is then removed, and washed successively with very dilute sodium hydroxide solution, alcohol and ether. When dry, it is placed in a long, slender test-tube, and the lower portion of the tube heated to redness. If mercury be present, it will volatilize and

condense in the upper portion of the tube as small, shining globules which can be seen with a hand-magnifier or low power of the microscope. If, now, a crystal of iodine be dropped into the tube and gently heated, the mercury upon the side of the tube is changed first to the yellow iodide and later to the red iodide.

**Morphin.**—Add sufficient ammonia to the urine to render it distinctly ammoniacal, and shake thoroughly with a considerable quantity of pure acetic ether. Separate the ether and evaporate to dryness. To a little of the residue in a watch glass or porcelain dish add a few drops of formaldehyde sulphuric acid, which has been freshly prepared by adding one drop of formalin to 1 c.c. pure concentrated  $H_2SO_4$ . If morphin be present, this will produce a purple-red color, which changes to violet, blue-violet, and finally nearly pure blue.

**Phenolphthalein**, which is now being used as a cathartic under the name of purgen, gives a bright pink color when the urine is rendered alkaline with caustic soda.

**Quinin.**—A considerable quantity of the urine is rendered alkaline with ammonia and extracted with ether; the ether is evaporated, and a portion of the residue dissolved in about twenty drops of dilute alcohol. The alcoholic solution is acidulated with dilute sulphuric acid, a drop of an alcoholic solution of iodine (tincture of iodine diluted about ten times) is added, and the mixture is warmed. Upon cooling, an iodine compound of quinin (herapathite) will separate out in the form of a microcrystalline sediment of green plates. The remainder of the residue may be dissolved in a little dilute sulphuric acid. This solution will show a characteristic blue fluorescence when quinin is present.

**Resinous drugs** cause a white precipitate like that of albumin when strong nitric acid is added to the urine. This is dissolved by alcohol.

**Urobilin in Urine and Stool.**—Edelmann's test. 10% alcohol solution of mercuric chlorid, 10% alcoholic solution of zinc chlorid and amyl alcohol. One to two minutes completes the test. Red pigment results from the addition of a few drops of each.

A more exact test is to acidulate 10 to 20 c.c. urine with a few drops of HCl, shake with 6 to 10 c.c. of amyl-alcohol. Add a few drops of a 1% solution of zinc chlorid in alcohol, which has been made strongly alkaline with  $NH_4OH$ . A green fluorescence appears if urobilin be present.

#### Practical Deduction To Be Derived From Examination of the Blood.

Dr. Howard P. Carpenter of Poughkeepsie draws attention to some of the commonly overlooked blood pictures in various conditions. When an acute appendix was in a seemingly quiescent period an examination of the blood showed perhaps 24,000 leucocytes and 95 per cent. polymorphonuclears with no eosinophiles. This did not mean that because the patient was more comfortable that operation should be postponed a day or so to see what developed; it meant to operate at once before this appendix filled with pus and ruptured into the abdomen.

Again the differential point between pernicious anemia and other anemias is its tendency to progress to a fatal issue. This clinical behavior rather than a blood examination alone is necessary for the diagnosis of pernicious anemia. There are few pathological conditions upon which a leucocyte count do not throw some light, but the bare count without the differential is worse than none at all. By experience it had been learned that a pus condition is to be expected when the polynuclear count hovers around 90 per cent., even if the leucocytes as a whole are not increased. In some cases in which the patient is not reacting well to an infection there is sometimes little leucocytosis but such cases are sometimes found to have a differential count as high as 99 per cent. polynuclears. Associated with the increase of polynuclear leucocytes in the pyogenic infections there is always a diminution or absence of eosinophiles. As the infection is successfully overcome the eosinophiles return. The diminution of leucocytes in malaria is an aid not to be neglected, for it is sometimes difficult to find the malarial parasites. In a case coming under observation an intermittent hematuria brought up the question

as to whether the condition was malaria or an infected kidney. The blood examination showed 5,000 leucocytes and over 60 per cent. lymphocytes. This was evidence of malaria as a more persistent search proved. An increase of leucocytes of 15,000 to 20,000 might occur within an hour after an extensive acute hemorrhage, too quickly to be due to infection. Leukemia is one condition that can be diagnosed from an examination of the blood alone, the leucocytes being enormously increased, sometimes to two or three hundred thousand with a predominance of lymphocytes in the lymphatic variety and of myelocytes in the splenomyelogenous variety.

Children have a large proportion of lymphocytes and a higher total count than adults, a fact that should be borne in mind. The finding of nucleated red cells even in quite considerable numbers in blood smears is insufficient evidence upon which to base a diagnosis of pernicious anemia. If the majority of nucleated red cells are megaloblasts then other symptoms of pernicious anemia should be sought.

The laboratory worker is probably discredited more times in the performance of the Widal test for typhoid fever than in any other one procedure. Many errors might be prevented if specimens sent to the laboratory were collected in capillary tubes instead of on glass, paper or metal slides. The Widal reaction usually appears in the second week of the disease, but sometimes not until the third or fourth week or well into convalescence. A reaction often persists for months or even for years after an attack of typhoid fever, thus making a history of much importance in the proper interpretation of a positive Widal.

Considering the Wassermann test for syphilis the proper attitude to take is that this test is of only secondary importance to a complete study of a case of syphilis. Kaplan's view that the serologist should report no serum positive unless it had resisted the best legitimate efforts to make it negative is excellent advice. However carefully a blood examination had been performed in all conditions its results are to be interpreted only in the light of the fullest possible clinical information.—(*Med. Rec.*, Nov. 18, 1915.)

#### Complement Fixation in the Diagnosis of Pulmonary Tuberculosis.

Charles F. Craig states that complement binding antibodies are present in the blood serum of both active and clinically inactive tuberculous infections. A polyvalent antigen prepared from several strains of the human tubercle bacillus has been found to give excellent results in complement fixation for tuberculosis. With the test described, a positive reaction was obtained in 92.2 per cent. of active tuberculosis and in 66.1 per cent. when the disease was clinically inactive. The test was negative in normal persons and in persons suffering from other diseases, with the exception of two syphilitics, in whom symptoms of a coincident tubercular infection were present. A positive reaction is specific and apparently indicates the presence of an active tubercular focus, although no clinical symptoms may be present. The results obtained are practically as good as those obtained by the Wassermann test for syphilis.—(*Am. Jour. Med. Sci.*, Dec., 1915.)

#### The Preparation and Preservation of Compliment.

Lloyd Thompson says nearly all small serologic laboratories are confronted by the problem of securing guinea pig serum for the Wassermann and other complement fixation tests. Where only a few tests are made at a time, and a pig is sacrificed for his blood, the expense often becomes greater than is justifiable. This

may be partially overcome by bleeding the pig from the heart. Even so, considerable compliment may be wasted and another pig must be bled the next time the tests are to be made.

Compliment may be frozen and preserved at a low temperature ( $-15^{\circ}$  C.) for several months, but most small laboratories are not equipped for such procedures.

Austin (*J. A. M. A.*, March 14, 1914) advocated making a 40 per cent. dilution of the guinea pig serum with 25 per cent. sodium chloride solution. Then in his tests he used 0.6 per cent. salt solution instead of the usual 0.9 per cent., and states that by so doing he gets approximately 0.9 per cent. in his tubes.

The author's method is more accurate.

An 8.1 per cent. sodium chloride solution is prepared and autoclaved (or boiled). Fresh guinea pig serum is diluted with this solution 1:1 and sealed in small tubes two c.c. to the tube. It will be seen that each tube contains 1 c.c. of pure guinea pig serum containing 0.9 per cent. NaCl. The entire sodium chloride content of each tube is 0.09 gm. corresponding to the quantity each 10 c.c. of normal salt solution should contain.

In order to make a solution containing 0.9 per cent. NaCl it is necessary to add only 8 c.c. of distilled water to the contents of each tube, and we have a dilution 1:10 guinea pig serum.

This is titrated before each test. Enough is present in each tube for the titration, five tests and positive and negative controls.

While the compliment is not usually kept longer than two weeks, some six weeks old has been used and was apparently as active as ever.—(*J. A. M. A.*, Feb. 26, 1916.)

62 Pierrepont Street.

#### Alcohol and Pneumonia.

The United States Public Health Service brands strong drink as the most efficient ally of pneumonia. It declares that alcohol is the handmaiden of the disease which produces ten per cent. of the deaths in the United States. This is no exaggeration. We have known for a long time that indulgence in alcoholic liquors lowers the individual vitality, and that the man who drinks is peculiarly susceptible to pneumonia. The Public Health Service is a conservative body. It does not engage in alarmist propaganda. In following out the line of its official duties it has brought forcefully to the general public a fact which will bear endless repetition. The liberal and continuous user of alcoholic drinks will do well to heed this warning, particularly at this season of the year when the gruesome death toll from pneumonia is being doubled.

#### Cancer of the Nasopharynx.

Owing to the various diagnoses made and the probably frequent confusion with sarcoma or endothelioma it is difficult, says W. E. Gatewood, Chicago, to summarize the literature of carcinoma of the nasopharynx. Many cases reported as having their origin elsewhere may have been primary in this region. Most carcinomas of the nasopharynx originate in the vault or on the posterior wall. They are characterized by a rather long latent period, hence it is difficult to estimate their duration. The malignant tumors of this region give rise to almost identical symptoms, but carcinomas are more apt to ulcerate and cause nose bleed. In the later stages, after ulceration has begun, the tumor appears irregular, fungus like, gray, multilobulated and covered by a bloody purulent exudate, and may be hard or soft, depending on their histologic structure. Extension may take place in four directions—downward, involving the palate; rarely laterally; anteriorly or up the nose, invading the sinuses and the brain; and posteriorly, secondarily invading the brain and eroding the skull. Carcinoma of the nasopharynx rarely produces visceral metastases, only one instance being recorded. About 60 per cent. occur in individuals between 40 and 60 years old. As a rule, adenopathy appears earlier than with other tumors of this region. From the few recorded cases it would seem that the disease is rare. Most authors admit that radical surgery is not indicated, but palliative treatment is advised. Gatewood reports two cases, one in a boy 9 years old, the other in a young physician. In this case the necropsy findings are also reported.—(*J. A. M. A.*, Feb. 12, 1916.)



## Diagnosis and Treatment

### Paratyphoid Fever and Its Prevention.

Medicine and surgery stand to gain a great deal of practical knowledge from the vast campaigns of the present war, though at a cost of human suffering that is appalling to contemplate. Both the lessons to be learned from the paratyphoid fevers that are endemic in camps and trenches, and the precautions that may properly be taken to lessen the incidence of these fevers among the combatants and the civil population alike, are illustrated by papers in this issue. Capt. Torrens and Lieut. Whittington add considerably to our knowledge of the signs and symptoms of the two varieties of paratyphoid fever distinguished by the bacteriologists as A and B. These two authors have had three to four hundred cases of paratyphoid fever under their charge, all of them, it may be assumed, among the well-trained and unusually well-fed occupants of our trenches, men in the prime of life and on a diet of high caloric value and rich in protein. It would be interesting to know how far such a diet may be held responsible for the initial diarrhoea observed by Torrens and Whittington in more than half their patients. Due emphasis is laid on the facts that paratyphoid B is a much less severe and fatal disease than typhoid fever, speaking generally, and that paratyphoid A is even milder than paratyphoid B. Indeed, the mortality is fortunately low in both these diseases, for only sixteen of the patients died, and only one of the sixteen had paratyphoid A. But by dwelling too much on the low mortality we fail to get paratyphoid fever A or B in true perspective as an incapacitating disease, and may therefore underestimate its importance from the military point of view. The fever lasts two or three weeks or more, and sudden recrudescences are common, especially in cases of the A type, while definite relapses occur in both types, but more often in A than in B. We have no data as to the duration of convalescence, but it seems safe to assume that a man who contracts paratyphoid fever can rarely be fit to return to duty in less than three or four months.

Particular attention may be drawn to the interesting remarks made by Torrens and Whittington on the diagnosis of paratyphoid fever, a diagnosis depending in the last resort upon bacterial cultures and the specific agglutinative powers of the patient's serum. There is reason to believe that not a few cases of paratyphoid escape detection under such a diagnosis as influenza or pyrexia of unknown origin. Due prominence is given to the fact that the detection and exclusion of paratyphoid carriers among the combatants is the best way of preventing the spread of these diseases, and one hears on all sides from men who have returned from "somewhere in France" that this duty is being carried out with unrelenting thoroughness by the medical authorities responsible.

The other possible method of prevention is that described in their paper by Castellani and Mendelson, who have been applying it on the large scale in Serbia. It consists in preventive inoculation with cultures of paratyphoid A and B bacilli which have been killed by carbolic acid. In view of the special conditions existing in that country, inoculation against paratyphoid has been combined with inoculation against typhoid fever and cholera as well. Prof. Castellani therefore employs what he calls a "tetra-vaccine," or, preferably, a quadruple vaccine, to protect against these four infections. His paper shows that it has been administered to over 170,000 persons among the military and civil

population of Serbia, without the occurrence of any untoward results.—(*Brit. Med. Jour.*, No. 46, 1915.)

### Cerebro-Spinal Fever.

Fairley and Guest report 50 cases of this disease. In discussing the symptomatology, they roughly make four classes: fulminating, acute, sub-acute or chronic, and abortive.

Considering the ordinary acute type, the three stages—naso-pharyngeal, septicemic and meningitic, described by Lund, Thomas and Fleming—could be clearly differentiated. Almost all of these acute cases showed a first stage of naso-pharyngeal inflammation, which was not always accompanied by symptoms of sore throat. The possibility that this stage is due to another infection on which the meningococcal infection later becomes engrafted, must be considered. The septicemic stage was the stage at which a certain number of our patients was admitted, and on lumbar puncture these cases gave clear fluid under pressure. Pus and diplococci were frequently not demonstrable in the fluid, but it almost always yielded a definite potassium permanganate reduction test. The manifestations of this stage were fever, pains in the back and limbs, chilliness, rigors, nausea, vomiting, irritability, headache, hyperesthesia, rash and herpes. This stage passed on to the third, or meningitic stage, in which the majority of their patients were admitted. Turbid fluid under pressure, containing pus and diplococci, was obtained on lumbar puncture. This stage was characterized by definite nervous symptoms, i. e., stiffness of neck, head retraction, flexed limbs, delirium or coma, exaggerated reflexes, marked Kernig's sign, and retention or incontinence of urine and faeces.

In the fulminating cases, these stages were not so manifest. Delirium and coma followed the onset rapidly. In the abortive type, meningitic symptoms were sometimes very slight. In the sub-acute and chronic cases, the meningitic stage was prolonged; the onset of internal hydrocephalus was denoted by a dry or diminishing lumbar puncture, increasing drowsiness, dilated pupils, rising blood pressure, nystagmus, variable McEwan's sign and rarely optic neuritis.—(*Med. Jour., Australia*, Vol. II, No. 17.)

### Epidemic Nephritis.

Lieut. J. C. McWalter, R. A. M. C., calls attention to epidemic nephritis, described as a new disease. It attacks a number of persons simultaneously, and exhibits the ordinary symptoms of acute nephritis—backache, headache, scanty urine, anorexia, etc.

What is its causation? It suddenly strikes a number of men exposed to similar conditions of hardship, to the same kind of food, to the same filthy insanitary environment, and drinking water liable to the same contamination. It incapacitates the patient, but appears to be seldom fatal. Patients seem to suffer from the effects months after the original attack.

Several observers have already commented on various features of this affection, but none of them have drawn attention to the presence of bacillus coli in the urine in this so-called epidemic nephritis. Cases seen in Dublin have usually undergone treatment for several weeks in hospitals, either at the base or in London, and the resistance of the bacillus coli even after months is quite remarkable. He has also found oxalates present, as well as slight but definite and persistent traces of albumin. The London hospitals treat the patients merely with rest and diluent drinks. The graver symptoms were thereby relieved, but weakness and incapacity remain. The author gave urotropin and small doses of tincture of perchloride of iron with spirit of nitrous ether, keeping the patient in bed on a milk diet. Improvement followed this treatment, but weakness was still complained of.

Most of the cases had been treated with the usual anti-typhoid injections previous to going to the front. It is possible that the so-called epidemic nephritis is really a modified form of enteric fever manifested by the bacilluria and the weakness.—(*Med. Press*, Sept. 15, 1915.)

## Pediatrics

### Diagnosis of Tuberculosis in Early Life.

H. R. M. Landis and Isadore Kaufman discuss the great difficulties in diagnosis, and point out that while infection commonly occurs in early life, we are quite unable to explain what is the determining factor of the development of open tuberculosis in later life. The problem is one of the diagnosis of the social surroundings rather than of the physical condition. An analysis of the study of 362 children is given, and details of the symptoms of those who developed signs of tubercle. Exaggeration of physiologically normal signs is easily interpreted as pathological. A bronchial quality of breathing may be heard all over the chest by the expired air being directed into the pharyngeal vault or against the roof of the mouth. Then, again, the lungs at times seem to move independently, with the result that loud puerile breathing is heard over one side, while over the other the breath sounds are almost inaudible. This peculiarity is often due to faulty posture.

Much has been written about enlargement of lymph nodes in the diagnosis of tuberculosis in the child; and the fact that the age of childhood is known as the lymphoid age seems to have been entirely forgotten. All children, irrespective of their social condition, have lymph nodes which are readily palpable. They are not readily detected till about the second year, but are so from then till puberty. To confine the examination to one group such as the cervical, and because the nodes in this situation are palpable, to assume that it is an evidence of tuberculous infection does not seem in any way justifiable, especially so in view of the fact that all the lymph nodes of the body are hypertrophied according to adult standards.

So far as the bronchial glands are concerned, the alleged percussion changes such as the semilunar areas in the second and third interspaces anteriorly and the vertebral dulness posteriorly, which are supposed to be indicative of such enlargement, are fanciful rather than real, and the questionableness of such findings has been shown by Gittings and Fetterolf in their work on frozen sections of the thoraces of infants and young children.

The mere fact that these nodes show some enlargement on x-ray examination is no proof that they are pathologically enlarged in view of the fact that all the superficial nodes are hypertrophied normally.

There is a great difference between tuberculosis that is clinically recognizable and hypersensitiveness to tuberculin. It is a great mistake to assume that, because a child reacts to some one of the tuberculin tests, it is tuberculous in the sense that it needs active treatment. The main problem consists in determining whether the child is physiologically normal, and if not, of using every endeavor to provide the means of making it so.—(*Phipps Inst. Report*, 1915.)

### Acute Encephalitis Showing Spirochetes.

Pehu and Gardère recite a case of a child born at term of a mother suffering from syphilis which she had contracted four years previously. At the age of 2 years the child suddenly developed a right-sided hemiplegia, and fourteen days later a broncho-pneumonia which terminated fatally.

At post-mortem examination some purulent serum was found in the right pleural cavity and a slight broncho-pneumonia of right lung. The brain showed atrophy of the left lobe of the cerebellum, with arteritis of the vessels at the base and in the left sylvian fissure. Scattered over the surface of the left cerebral hemisphere were several foci of encephalitis; they were small, of a yellowish color and soft consistence, limited to the gray matter, and did not implicate the basal nuclei. In the neighborhood of the foci the meninges were thickened.

Microscopic examination showed foci to be composed mainly of round cells, with epithelioid cells towards periphery, and surrounded by dilated blood-vessels. The thickened patches of meninges presented infiltration with round cells. Sections of foci, stained with silver nitrate according to Levaditi, disclosed the presence of numerous spirochetes.—(*Arch. de Med. d'Enfant*, No. 6, 1915.)

### Ovarian Sarcomata in Children.

T. T. Higgins gives a summary of three cases:

1. Female, 5 years, admitted to hospital with fever, and large tender swelling in lower part of abdomen; rectal examination revealed presence of a tumor in the pelvis. The swelling had been first noticed six weeks previously, and had gradually increased in size. During the illness colic and constipation had been prominent symptoms, and during the week just before admission a hemorrhagic vaginal discharge had been noticed. Laparotomy was performed, and a large left-sided ovarian sarcoma (round and spindle-celled), weighing  $3\frac{1}{2}$  pounds, was

removed. X-ray treatment was carried out after operation to diminish chance of recurrence. The child was well five months later.

2. Female, 10 years, admitted to hospital with a history of recent colic, constipation and loss of weight. A lump in the belly had been noticed five weeks previously. On admission the child was pale, temperature normal, and there was detected a round, freely movable tumor which rose out of the pelvis, and by rectum felt on right side. A sarcomatous tumor (round and spindle-celled) of the right broad ligament was removed.

3. Female, 7 years, was admitted in an exhausted condition after an illness of four months' duration characterized by fever, with a large abdominal mass rising out of right side of pelvis and reaching to the level of the liver. She died and post-mortem showed a large round-celled sarcoma weighing  $5\frac{1}{4}$  pounds in connection with the right ovary.—(*Brit. Jour. Dis. Child.*, No. 6, 1915.)

### Intussusception Complicating the Puerperium.

G. Nyström records the case of a 9-para, aged 43, who gave birth to a male child on February 14, 1914. Labor was easy, but there was more liquor than usual. The placenta came away normally soon after the completion of labor. On February 17 the patient got up in the morning to eat, and during the meal, which consisted of porridge and milk, she developed severe abdominal pain and felt very ill. Later in the day vomiting supervened, and there was complete retention of the feces and flatus. During the night the pain increased, and on the morning of February 18 an examination showed the abdomen to be somewhat distended and a little tender. The pulse was 85, and the rectal temperature  $100.4^{\circ}$ . Active peristaltic movements of the small intestine could be detected through the flaccid abdominal wall. Below and to the right of the umbilicus a swelling could be felt and was suggestive of invagination of the intestine at this point. A median laparotomy was therefore performed. A considerable amount of blood-stained exudate was found in the abdominal cavity. At a point about 10 cm. above the ileo-cecal valve there was an intussusception of the lowest section of the ileum, whose attachment to the posterior abdominal wall was retroperitoneal and passed horizontally inwards from the cecum. No difficulty was experienced in reducing the invagination, and the patient made an uneventful recovery.

Discussing this case, the author suggests that the evacuation of the uterus facilitated the development of the intussusception by relaxing the tension of the abdominal wall, and thus giving the intestines greater freedom of movement. A further but less important factor in the production of the intussusception might be the diminution in the volume of the abdomen caused by the contraction of the uterus. Finally, the character of the attachment of the ileum to the posterior abdominal wall at the point where the intussusception occurred has already been associated by some surgeons with intestinal invagination.—(*Finnska Laekares. Hand.*, by *Brit. Med. Jour.*, Nov. 20, 1915.)

### Cerebral Intoxication and Meningitis.

Henry Heiman says in distinguishing clinically between cerebral intoxication and meningitis, the following points must be borne in mind:

(1) In intoxication there is always an etiologic factor, to which the meningeal signs are secondary. Occasionally the cause is difficult to find, but thorough investigation and observation will often reveal one of the infectious diseases or other causal factors.

(2) The signs in cerebral intoxication are significant of a general cerebral irritation; in primary meningitis there are, in addition, distinct focal signs. In intoxication we may have headache, photophobia, delirium, muscular twitchings, possibly general convulsions; in meningitis we may also have ptosis of the eyelids, unequal pupils, strabismus, facial palsy, even hemiplegia and other focal manifestations.

(3) Lumbar puncture is the most important and definite means of differentiating the two conditions. In intoxication the fluid is sterile and clear; in meningitis bacteria will in most cases, be found in the fluid either by smear or culture, and the appearance of the fluid is changed from the normal. The cytologic examination of the fluid is also significant, as in the intoxication cases no variation from the normal occurs, whereas in meningitis various changes are present, depending upon the type of the infection, i. e., whether meningococcal, pneumococcal, influenzal, tuberculous, etc.

When the ordinary clinical and laboratory methods are not sufficient to distinguish between the two above-mentioned conditions, lumbar puncture is not only justifiable but necessary, even in the presence of an acute infection like pneumonia or typhoid fever.—(*Arch. Ped.*, Vol. xxxii, No. 8.)



## The Physician's Library

**Practical Cystoscopy and the Diagnosis of Surgical Diseases of the Kidneys and Urinary Bladder.** By Paul M. Pilcher, M.D., Consulting Surgeon to the Eastern Long Island Hospital. Second Edition, revised and enlarged. 504 pages, with 299 illustrations, 29 in colors. Cloth, \$6.00 net; half morocco, \$7.50. Philadelphia and London: W. B. Saunders Company, 1915.

For practical value few books have ever been presented on any subject that can excel this volume. It takes up the subject in great minutiae and makes it possible for a man who has never looked through a cystoscope to get a most intelligent conception of all the difficult details of this work. The illustrations add materially to the text, which is unusually clear and understandable.

**Diseases of the Skin.** By Henry H. Hazen, M.D., Professor of Dermatology in Georgetown and Howard Universities. Cloth, 540 pages, 234 illustrations. St. Louis: C. V. Mosby Co., 1915.

This book is intended for the student and general practitioner and is therefore somewhat elementary. Without going into detail, the field is sufficiently covered for all practical purposes. Particular attention is given to skin diseases of negroes. The author is an authority in his specialty and his ideas will be given due consideration.

**Obstetrics.** By Edwin Bradford Cragin, M.D., F.R.C.S.; Professor of Obstetrics and Gynecology, College of Physicians and Surgeons, Columbia University, New York. Assisted by George H. Ryder, A.B., M.D., Instructor in Gynecology, College of Physicians and Surgeons, Columbia University, New York. Cloth, 858 pages, with 499 engravings and 13 plates. \$6.00 net. Philadelphia: Lea & Febiger, 1916.

The eminence of the author is sufficient guarantee of the practical value of this book and a careful perusal of its pages impresses one with its great excellence. It completely covers the subject, under the general headings of Anatomy and Embryology, Physiological Pregnancy, Pathological Pregnancy, Pathological Labor, Obstetric Surgery, and Pathological Puerperium. The subject matter is concisely presented and is thoroughly illustrated.

**Principles and Practice of Physical Diagnosis.** By John C. DaCosta, Jr., M.D., Assistant Professor of Medicine, Jefferson Medical College. Third Edition, thoroughly revised. Cloth, 589 pages with 243 original illustrations. \$3.50 net. Philadelphia and London: W. B. Saunders Company, 1915.

The third edition has given the author an opportunity to present the latest conception of practice and the various new methods of using the diagnostic instruments of precision. He also discusses a variety of cardiac conditions not found in the later text-books. The edition is an improvement over its predecessors and is a valuable text-book.

**Bone-Graft Surgery.** By Fred H. Albee, M.D., Professor of Orthopedic Surgery at the New York Post-Graduate Medical School. 417 pages, with 332 illustrations. Cloth, \$6.00 net; half morocco, \$7.50 net. Philadelphia and London: W. B. Saunders Company, 1915.

The originality displayed by Albee in bone-graft surgery makes his book very welcome. It is an exemplification of his technique, which is now familiar to the profession through his writings and demonstrations. Albee has created a new science in surgery and this volume worthily portrays it.

**Diseases of the Stomach and Upper Alimentary Tract.** By Anthony Bassler, M.D., of the New York Polyclinic. Third Edition. 880 pages. Philadelphia: F. A. Davis Company, 1916.

The author thoroughly and conscientiously covers the subject in this work. It shows the most painstaking effort and is the result of a long and varied clinical experience. Medicine and surgery are well combined in the methods of treatment. The book reflects credit on the author.

**Infant Feeding.** By Harry Lowenberg, M.D., of the Medico-Chirurgical College. Cloth. 382 pages. Illustrated \$3.00 net. Philadelphia: F. A. Davis Company, 1916.

In view of the renewed interest in this subject, this monograph should be well received. It is based on the author's pediatric experience and it emphasizes the value of the teachings of the German school. He dwells especially on the necessity of breast feeding. The book is practical and the subjects are well presented.

**Autoplastic Bone Surgery.** By Charles Davison, M.D., Professor of Surgery and Clinical Surgery, University of Illinois, and Franklin D. Smith, M.D., Clinical Pathologist to University Hospital, Chicago. Cloth, 369 pages, with 174 illustrations. \$3.50 net. Philadelphia: Lea & Febiger, 1916.

Facts and theories are well combined in this volume. Wherever the literature is at variance with their experimental and clinical deductions, the authors have presented the literature as it exists in addition to their own findings. The authors' opinions are based upon histopathological study and analysis of tissues removed from experimental animals at varying periods of time after an operation had been performed. One of the most practical subjects under discussion is the method of repair of fractures by autoplastic transplantation of bone, which, it is hoped, will replace the use of plates and screws for holding fractures in place. The photographs are very illuminating.

**Breathe and Be Well.** By William Le Howard, M.D. Cloth, 150 pages. New York: E. J. Clode, 1916.

Laugh and grow fat. Breathe and be well. These admonitions can be carried out successfully, as has been abundantly proven. This book is valuable in that it gives clearly and intelligently certain fundamental rules which, if carried out, will enable the individual to get well and to stay well. Simple breathing exercises are all that is necessary. Let the reader try a "morning fresh air cocktail" or an air "night cap" and be convinced.

**The Principles and Practice of Perimetry.** By Luther C. Peter, M.D., Associate Professor of Ophthalmology, Philadelphia Polyclinic. Cloth, 232 pages, with 119 illustrations. \$2.50 net. Philadelphia and New York: Lea & Febiger, 1916.

The author enters a new field and his efforts will be of use to men who treat the diseases of the eye. Perimetry is too little understood and this book gives us much knowledge of a neglected opportunity.

**Cancer of the Stomach.** By Frank Smithies, M.D., Gastroenterologist to Augustana Hospital, Chicago. With a Chapter on the Surgical Treatment of Gastric Cancer, by Albert J. Ochsner, M.D., Professor of Clinical Surgery in the University of Illinois. 522 pages, with 106 illustrations. Cloth, \$5.50 net; half morocco, \$7.00 net. Philadelphia and London: W. B. Saunders Company, 1916.

This is a clinical study of 921 operatively and pathologically demonstrated cases. There are few books devoted exclusively to the subject, and this may therefore be considered in the "long felt want" class. It is authoritative and is well printed and illustrated.

**Surgical Operation with Local Anesthesia.** By Arthur E. Hertzler, M.D., Surgeon to the General Hospital, Kansas City, Mo. Cloth, 327 pages, 173 illustrations. \$3.00. New York: Surgery Publishing Company, 1916.

The profession is indebted to the author for a clear presentation of this important subject. His wide experience with local anesthesia has made him an authority and he portrays vividly and lucidly the wide range of surgical procedures which can be accomplished under the influence of novocain and other local anesthetics. The book is well printed and illustrated.

**Transactions of the Tri-State Medical Association of the Carolinas and Virginia.** Cloth. 436 pages. Edited by R. E. Hughes, M.D. Charlotte: Observer Printing House, 1915.

We have here a finely appointed volume, which is a tribute to the genius of the president of the association, Dr. E. C. Register, of Charlotte. It contains a wealth of papers, not the least valuable of which is the presidential address. The organization is one of the liveliest in the country, and is making itself felt in the medical councils of the South.

### BOOKS RECEIVED.

All books received will be acknowledged in this column, and those which warrant further notice will be given a more extended review in a later issue.

**Les Fievres Paratyphoïdes.** Par. Jacques Carles, Professor of the Faculty of Medicine of Bordeaux. Cloth, 95 pages. Paris: J. B. Baillière et Fils, 1916.

An interesting monograph on an important subject.

**Progressive Medicine.** Vol. XIX, No. 1. Edited by H. A. Hare, M. D. Paper, \$6.00 per annum. Philadelphia: Lea & Febiger, 1916.

Discusses surgery of the head, neck and thorax, infectious and children's diseases, etc. A valuable number.

(Continued on p. 20.)

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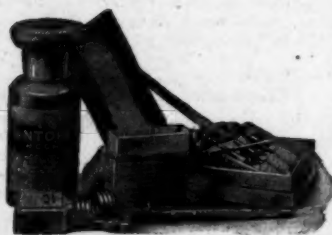
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(Continued from p. 174.)

**The Medical Clinics of Chicago.** Volume I, Number V (March, 1916). 220 pages, 67 illustrations. Published bi-monthly. Price per year, paper, \$8.00; cloth, \$12.00. Philadelphia and London: W. B. Saunders Co., 1916.

Contains seven well-presented clinics on every-day subjects.

**Drugless Medicine.** By Susanna W. Dodds, M.D. Cloth. 1721 pages. New York: Health Culture Co., 1915.

Valueless for believers in medicinal agents. Useful to those who see no good in drugs.

#### The Lewis Stephen Pilcher Semi-Centennial.

Dr. L. S. Pilcher of Brooklyn, editor of *Annals of Surgery*, who has been practicing in Brooklyn for fifty years, will be honored by his colleagues on May 11th, 12th and 13th.

During this celebration public clinics will be held in the various Brooklyn hospitals, in which distinguished visiting surgeons will participate.

A banquet will be held on the evening of May 12th at the Hotel Bossert. Among those who will participate in the exercises are Drs. Geo. W. Crile, W. W. Keen, Charles H. Mayo, John B. Murphy and Victor C. Vaughan, and Mayor Mitchel of New York.

#### New Diagnostic Points on Pneumonia.

By special invitation of the faculty of the Long Island College Hospital, Dr. William G. Bissell, Chief of the Bureau of Laboratories of the Department of Health of Buffalo, delivered an entertaining series of lectures to the students in March. Most interesting was one explaining the methods of Rufus Cole and A. R. Douchez of Rockefeller Institute in the laboratory differentiation of the types of pneumococci producing lobar pneumonia and the possible use of curative serums.

Dr. Bissell explained that pneumococci are demonstrated to belong to four distinguishable classes, known as Types I to IV, and by technical laboratory procedures using the pneumonic sputum the exact type of the infecting organism can be determined within a period of a few hours. It is this lack of differentiation that has made the serum treatment in lobar pneumonia of doubtful value. Under the direction of Dr. Augustus B. Wadsworth of the New York State Health Department laboratory an effective serum has been produced in the treatment of lobar pneumonia due to Type I.

Approximately 70 per cent. of all cases of lobar pneumonia are estimated to be due to Types I and II; 10 per cent. to Type III (*streptococcus mucosus*), and 20 per cent. to independent strains classified under Type IV. Present statistics indicate that to Type III is due a severe but relatively infrequent infection with high mortality; to Type II cases of lesser severity; to Type I those only slightly less severe than II, the predominating numbers of cases varying between Types I and II from year to year; to organisms of Type IV are due infections with milder symptoms usually ending in recovery. From the standpoint of the prognosis alone, the determination of type may, therefore, be of considerable significance to the practitioner.

Statistics of treatment with homologous serum of cases of pneumonia caused by Type I have shown striking reductions in mortality. The results of similar treatment in cases caused by Type II vary. Homologous sera for Type III (*streptococcus mucosus*) and for the independent strains belonging to Group IV have not as yet been prepared for distribution.

#### Report of Surgeon General Gorgas, U. S. A.

The army was healthier in 1915 than ever before, according to the annual report of Surgeon Gen. William C. Gorgas. The admission rate for the entire army in that year was 660 per 1,000, which is the lowest on record. The rate for discharge for disability for the entire army was 12.99, as compared with 12.77 in 1913. The death rate was 4.40.

Satisfactory progress was also made in checking the rates of certain diseases. There were but seven cases of typhoid fever during the year among the 98,649 men stationed in the United States, Alaska, the Philippines, Hawaii, Panama, Porto Rico and China. Of these only two had received the complete course of vaccine treatment. The admission rate for tuberculosis has receded to 3.50, the new low record; while the act of Congress stopping the pay of men incapacitated for service by venereal diseases has been instrumental in keeping them in check, with but a slightly higher rate than that for 1913. Alcoholism was less prevalent than ever before, the rate being 13.64 for the year.

There were only twenty-three deaths among the 4,361 officers included in the mean list, a rate of 4.76, as contrasted with 5.85 in 1913. Admissions totalled 2,162 and constant non-effectives 101.81. Among the principal causes of admission were diarrhoea and enteritis, 37.61; bronchitis, 35.08; diseases of the pharynx,

35.08; influenza, 29.81; diseases of the nasal fossae, 23.85; malaria, 21.78; diseases of the stomach (ulcer and cancer excepted), 19.27, and appendicitis, 7.57.

The colored troops had the highest non-effective, death and discharge rates; the Porto Rican troops had the lowest admission rate and the second highest death rate. The white troops had the second highest admission and discharge rates, and the Philippine Scouts had the highest admission rate. In 5,604 operations performed upon officers and enlisted men only fifty-one were failures and twenty-seven deaths occurred. Gen. Gorgas, discussing the reasons for prevalence of venereal diseases, says:

"The matter appears to be principally a question of discipline and it may now be stated that venereal disease in a command is an index of the discipline of that command. It is believed that the instruction of soldiers as to the dangers arising from venereal diseases is inadequate. Heretofore often perfunctory lectures during the year has been the extent of the educational measures. An intelligent and comprehensive series of lectures should be given at recruit depots on hygienic matters, including venereal diseases. This instruction should be aided by illustrations and moving pictures adapted to the subject. This instruction could be kept up at posts, and should include subjects of general interest in military sanitation. It is planned to recommend such a system this year when certain details can be determined."

#### The Factor of Poverty in Sanitation.

The factor of poverty in sanitary problems was discussed in Washington, November 26, by Surgeon General William C. Gorgas, whose success in cleaning up Havana and the Panama canal zone have brought him recognition as America's leading sanitarian. His audience was the Clinical Society of Surgeons, assembled in their twenty-fourth annual meeting. Dr. Gorgas said, in part:

"Such sanitary work as is necessary in the tropics is inexpensive, but measures directed against special disease are not the greatest good that can be accomplished by sanitation.

"Before these great results that we can all now see are possible for the sanitarian, we shall have to alleviate more or less the poverty at present existing in all civilized communities. Poverty is the greatest of all breeders of disease and the stone wall against which every sanitarian must finally impinge.

"During the last ten years of my sanitary work I have thought much on this subject. Of what practical measure could the modern sanitarian avail himself to alleviate the poverty of that class of our population which most needs sanitation? It is evident that this poverty is principally due to low wages; that low wages in modern communities are principally due to the fact that there are many more men competing for work than there are jobs to divide among these men. To alleviate this poverty two methods are possible, either a measure directed toward decreasing the number of men competing for jobs, or, on the other hand measures directed toward increasing the number of jobs.

"The modern sanitarian can very easily decrease the number of men competing for jobs; if by next summer he should introduce infected stegomyia mosquitos at a dozen different places in the southern United States he could practically guarantee that when winter came we would have several million less persons competing for jobs in the United States than we have at present. This has been the method that man has been subject to for the last six or seven thousand years, but it does not appeal to me, nor, I believe, to yourselves. This method is at present being tried on a huge scale by means of the great war in Europe. I do not think that I risk much in predicting that, when this war is over and we shall have eliminated three or four million of the most vigorous workers in Europe, wages will rise and for a long time no man will be unable anywhere in Europe to get a job at pretty fair wages.

"But I am sure that every sanitarian would much rather adopt measures looking toward the increase of jobs rather than, as we have done in the past, submit to measures that decrease the number of competitors for jobs.

"I recently heard one of the members of the Cabinet state that in the United States 55 per cent. of the arable land, for one reason or another, is being held out of use. Now suppose in the United States we could put into effect some measure that would force this 55 per cent. of our arable land into use. The effect at once would be to double the number of jobs. If the jobs were doubled in number wages would be doubly increased. The only way I can think of forcing this unused land into use is a tax on land values.

"I therefore urge for your consideration, as the most important sanitary measure that can be at present devised, a tax on land values."